

DECEMBER, 1947

CHEMICAL PROCESSING

PREVIEW

The Magazine of
PROCESSING, ITS CONTROL AND DEVELOPMENT

In this issue

102 Articles

NEW SOLUTIONS OF PLANT PROBLEMS
6 actual "Installation-type" articles
of "how it was done better".

MATERIALS . . . 13 reports on develop-
ments in materials that make for
better processing.

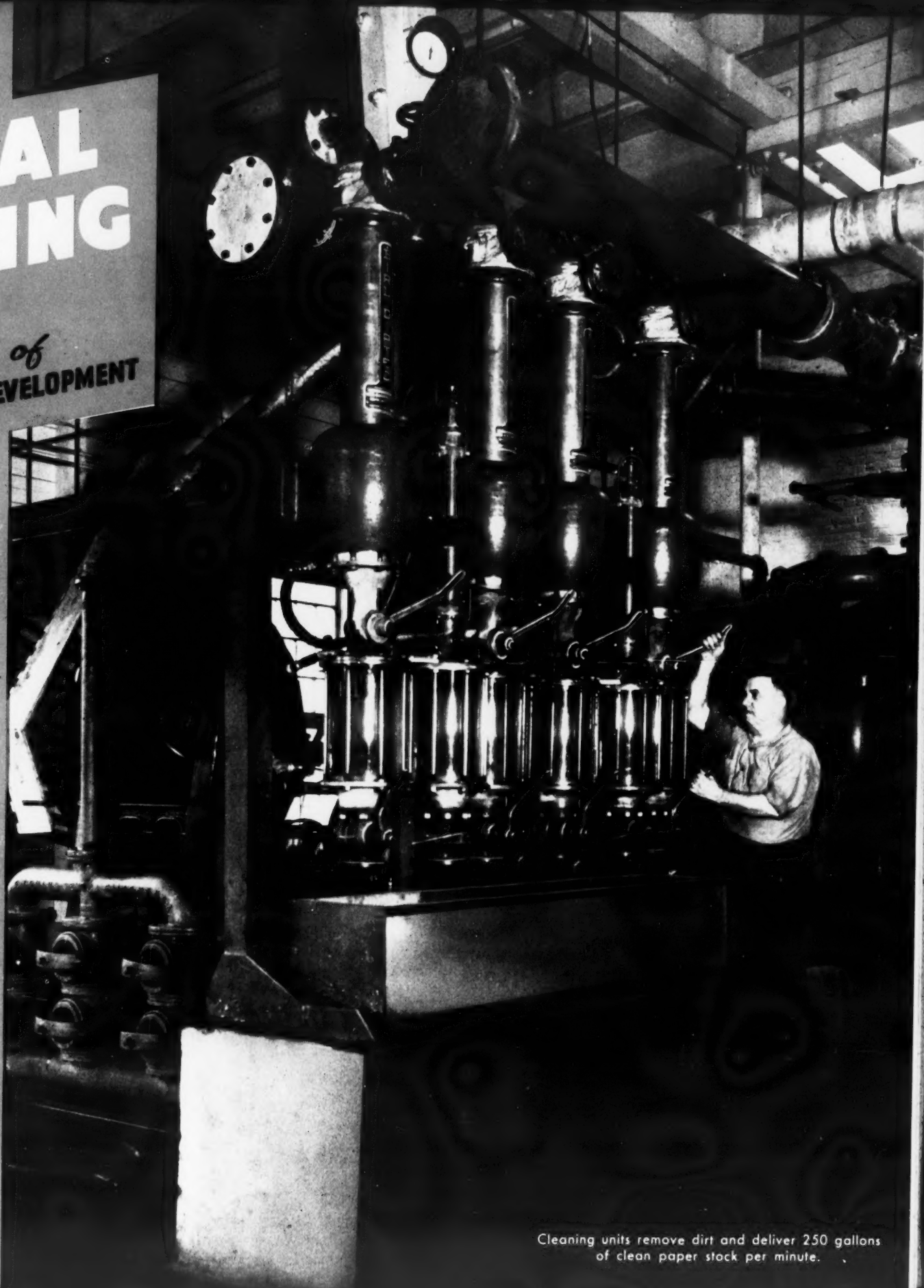
MATERIAL HANDLING . . . 7 examples
of improved ways to handle mate-
rials in process.

PROCESS INSTRUMENTATION . . . 6 re-
ports on better process control
through instruments.

IDEAS . . . 5 Ideas gleaned from this or
other industries that offer possibili-
ties in chemical processing.

BRIEFS . . . 11 "quick looks" at inter-
esting articles in contemporary pub-
lications.

. . . plus scores of new literature and
new product reports of top interest to
men who must operate plants.



Cleaning units remove dirt and deliver 250 gallons
of clean paper stock per minute.

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&
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"That's Interesting"

Pasting Labels on Aluminum Surfaces

To easily and permanently fasten any type of paper label to aluminum surfaces, sodium silicate ("water glass") is said to be particularly satisfactory. Oil or grease should first be cleaned off with naphtha or other mineral spirits. (Technical Advisor—Reynolds Metals Co., Louisville, Ky.)

Diffusing Fluorescent Light

Slip-on plastic tubes in seven colors have been developed for diffusing fluorescent light. (Electric Manufacturers' Information Center, 155 East 44th St., New York)

Reclaiming Used Tin Cans

Tin cans may be salvaged and used again by means of a process for which a patent has recently been issued. After a can has been used, it is cleaned thoroughly, lid seams cut off, and can subjected to drawing which stretches the wall to its original height. It is then ready to be refilled and have a new lid rolled on.

Self-Sharpening Shears

A Denver man has won a patent on self-sharpening shears which have an abrasive in a recess on one of the blades intended to maintain a keen edge on the other. (Nat'l. Patent Council)

Aluminum-Coated Mirror Reflects Only One Image

An aluminum-coated mirror with the metal on the front surface of the glass has been developed by the Libbey-Owens-Ford Glass Co. It is designed primarily for use in scientific instruments, where a reflection of high perfection is desired. The mirror has the advantage of reflecting only a single image, while back surface mirrors reflect a faint, but discernable, added image. In manufacture, a coating of hard quartz is deposited on the aluminum by a method called thermal evaporation. This film withstands temperatures of from — 60 degrees F. to in excess of 200 degrees F. It also resists moisture and salt atmosphere. The mirror is available in sizes up to 30 by 40 inches. (Libbey-Owens-Ford Glass Co., Toledo, Ohio)

(Continued on next page)

BASIC CHEMICALS

FOR AMERICAN INDUSTRY

For more information

"That's Interesting"

Concentrate Rare Helium At 450° Below Zero

Ohio State University scientists have concentrated a rare type of helium at 450 degrees below zero by means of a single step process. The newly concentrated helium is known as the "mass 3 isotope" of the substance, which exists normally in the proportion of only one part to a million of the normal "mass 4 isotope".

This experiment opens the possibility of accumulating a quantity of mass 3 helium for study, investigation of which may throw light on the strange behavior of ordinary liquid helium. The research is being supported by the Office of Naval Research.

★

Cellulose Acetate Molding Materials Reprocessed

Celanese Corporation of America, New York 16, N. Y., is making available facilities for reformulating, recoloring and reprocessing customer's cellulose acetate and ethyl cellulose molding materials, adding virgin flake and plasticizer when necessary. Any cellulose or ethyl cellulose that can be reformulated into a molding material, suitable for the intended application, will be accepted for analysis and reclamation. The service is also available on competitive materials.

★

Supply of Drugs, Gums Near Normal Level

"As world trade shakes free from wartime barriers, all 300 of the natural drugs, spices and gums on which American packaged medicines and pharmaceuticals depend, are expected to be available —," states the Bulletin of the Office of Pharmaceutical Information. 1945 imports of botanical drugs were valued at 33 million dollars.

★

Fiber Made from Terephthalic Acid & Ethylene Glycol

A new synthetic fiber has been developed in England. It resembles silk, can be washed without special precautions, resists heat and light and can be woven or knitted. It is made from terephthalic acid and ethylene glycol and aptly called Terylene. (Merck Report for October)

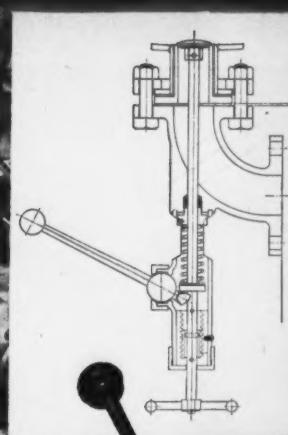
★

Twisted Cotton Yarn's Elongation 100%

A twisted cotton yarn, recently developed, has various degrees of elongation up to 100%. It withstands laundering.

(Continued on third cover)

For more information on product at right, specify CP 3316 see information request blank between pages 2-3.



Unique in design, easy to install and simple to maintain, Pfaudler's Quick-Opening Stainless Steel Flush Valves are a boon to the process engineer. Lever seat and idiom is for quick opening and closing, stand stand is for throttling flow.

PFAUDLER ANNOUNCES

New QUICK-OPENING

STAINLESS STEEL FLUSH VALVES . . . 2" 3" 4" I. D.

To complement its line of *standard* stainless steel reactors, kettles, receivers, heat exchangers, and allied equipment, Pfaudler now adds a new line of popularly priced, Quick-Opening Stainless Steel Flush Valves. They are also adaptable for use on glass-lined steel vessels. Several exclusive design features make them easy to operate and maintain besides prolonging service life:

1. Self-centering valve seat assures a tight seal without scoring.

2. Valve is spring-actuated with lever handle for quick opening and closing.
3. Equipped with a throttle control which permits regulation of flow without chattering.
4. Simple in design and easily maintained for extensive applications.

These valves are in use in the field and have given satisfactory performance under various conditions. Details and prices on request.

Select the Stainless Steel Equipment You Need

From Pfaudler's Standards . . .

Pioneering reaction kettles, heat exchangers and allied equipment of *standard* designs, first in glass-lined steel, and later, stainless steel, Pfaudler has enabled chemical engineers to select the unit that best meets processing requirements at minimum cost. With costs increasing in every direction, specify "Pfaudler Standard" whenever possible.

Pfautler Stainless Steel Kettles, Mixers, Reactors, etc., are described in Catalog 823; Heat Exchangers in Catalog 837. A request written on your letterhead will bring either or both.



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THE PFAUDLER CO., ROCHESTER 4, NEW YORK
ENGINEERS AND FABRICATORS OF CORROSION RESISTANT PROCESS EQUIPMENT
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CHEMICAL DRYING PROBLEMS

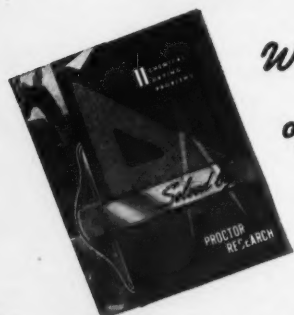
PROCTOR RESEARCH

Each of the 11 products listed above represents a distinct and different drying problem. Magnesium carbonate, for example, must be dried from an initial moisture content of 56.5% (bone dry weight basis) to a moisture content of 0.1% at the rate of 500 pounds per hour (commercial dry weight), while starch is dried from 78.5% initial moisture content to 13.6% at the rate of 4,800 pounds per hour. Each of these products (and the list could be expanded many times) was studied by Proctor engineers, and the performance of the Proctor equipment finally

installed was guaranteed in writing in the sales contract. In some cases the basic designs of the equipment was similar—but in each case modifications were made to suit the individual product or plant requirements. While all of these products are being dried in huge continuous systems equipped with preforming feeds—many problems brought to Proctor engineers have called for small tray or truck dryers. You may be sure that any problem—large or small—that you bring to Proctor & Schwartz, Inc. will receive the full benefit of all of the ingenuity and means at our disposal that were applied to solving the problems covered by these case histories.

*Write for your copy
of this New Proctor Booklet*

If you have not already received this latest booklet—which gives complete information on these 11 chemical drying problems—write for your copy today. Ask for Bulletin #309.



PROCTOR & SCHWARTZ, INC. • PHILADELPHIA 20, PA.

—When inquiring specify CP 3317 . . . see information request blank, pgs. 2-3—

CHEMICAL PROCESSING PREVIEW

The Magazine of
Processing, Its Control and Development
VOL. 10 DECEMBER, 1947 NO. 12

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HIGHLIGHTS

These articles have been selected by the Editors as having unusual interest

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- * Muller-Type Mixer . . . Unit is especially suited for small production, pilot plant and laboratory work 50
- * Engineering Data Book . . . Gives fundamentals on pipe and fin coil calculations for heating and cooling applications 52

Cover Picture Story

The pulp cleaning installation shown on the cover consists of four primary and two auxiliary units. Pulp is subjected to controlled pressures and whirling action. Dirt is separated according to specific gravity. Primary units remove heavy dirt; auxiliary units light dirt completely from the system, with no chance of it getting back into the stock. See Page 6.

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DECEMBER, 1947

Spray Drying

can now be adapted
to numerous

CHEMICAL PROCESSES

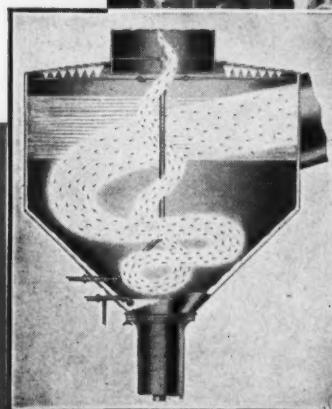
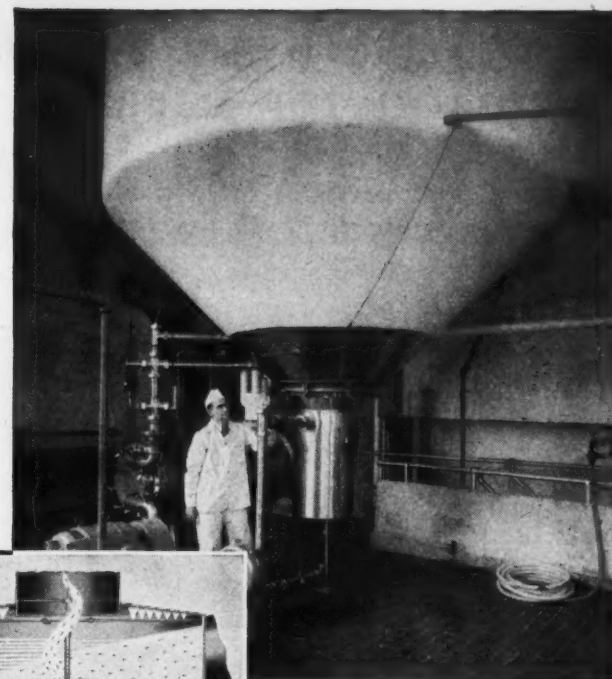
Brings thermal efficiency, product uniformity, high solubility, protection to heat-sensitive materials.

Swenson scores another FIRST in service to the process industries by bringing the advantages of spray drying to a wide variety of chemicals.

Swenson Gray-Jensen Spray Dryers are extensively used in the drying of milk, milk products, eggs, yeast, pectin, juices, and extracts. They have been especially successful from the standpoint of economical operation, product purity, and full recovery of solids.

Now Swenson engineers are adapting the Gray-Jensen process to chemical applications. Such products as zinc sulphate, manganese sulphate, pentaerythritol, starch, cascara, and distillery slop are now being spray dried successfully with indications that equal benefits may be obtained in the similar handling of many other materials.

Spray drying converts solutions to solids in a single pass, producing uniform spherical



Diagrammatic view of the Liquid Collector showing how entrained powder is recaptured and dissolved as the exhaust air from the drying chamber absorbs moisture to near saturation.

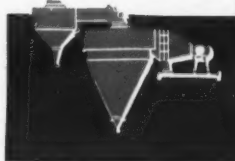
particles that are readily soluble... require no crushing or sifting. The low temperatures used (evaporation at or near the wet bulb temperature) avoid thermal decomposition or deterioration of heat-sensitive materials.

The Swenson Gray-Jensen Spray Dryer employs a Liquid Collector, eliminating the use of cloth bags or screens and recovering substantially 100% of the chemical values from the original solution. Swenson engineers will gladly discuss the feasibility of spray drying your materials.

SWENSON EVAPORATOR CO.

Division of WHITING CORPORATION Harvey, Ill.

Export Department: 30 Church Street, New York 7, N. Y.



When inquiring specify CP 3318 . . . see information request blank, pgs. 2-3

Use Dirt Removers to Clean Stock and Meet Demand for Cleaner Paper

Primary and auxiliary separator sections form highly flexible system

New Solutions
OF PLANT PROBLEMS

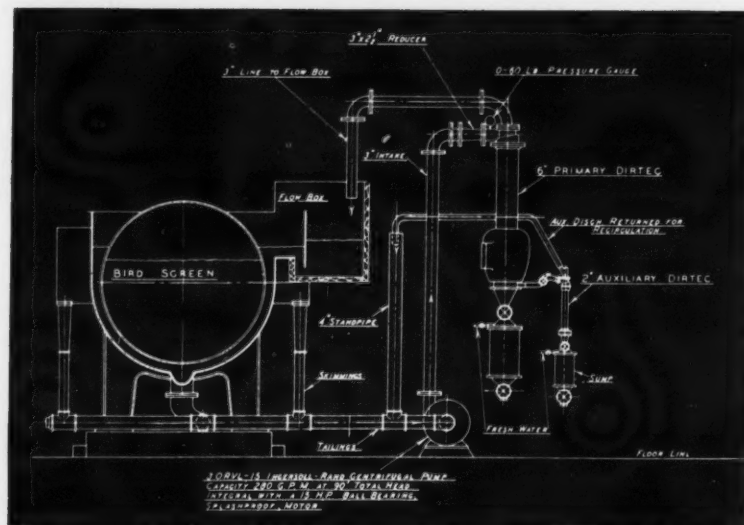


Diagram of Dirtec installation in screen tailings cleaning application

Dirtec units — auxiliary sections are between first and second and second and third separators

paper fibers. Dirt is then passed, without riling it up in any way, to the separating chambers which are below the baffles near the center of the Dirtecs and adjacent to outlets to the two auxiliary section. The dirt has been separated according to its specific gravity. Heavier dirt remains in the outer

portion of the column and is removed and collected in the sumps shown near the bases of each primary section which put it through another vortex treatment and collect the dirt in similar sumps near the base of each

auxiliary section. These auxiliary sections operate as integral units with the primary units, without pumping in-between.

Pressure in the primary sections is sufficient to operate the auxiliary sections.

The collected dirt is simply removed periodically without interrupting the operation of the machine. The operator (see cover picture) closes the valves just above the sumps, the sumps are emptied and filled with water and the valves are re-opened. The dirt has no chance to sneak back into the stock.

The number of primaries served by a single auxiliary depends on the operating conditions. Capacity of a single auxiliary is 30 gallons per minute. Output of clean stock from primary Dirtec averages 260 g.p.m. depending on the number of auxiliaries employed.

RESULTS — Provide efficient dirt removal both ahead of screens and for handling tailings. Contribute to production of uniform, high grade paper. In handling tailings one auxiliary unit, the dirt rejected by the screen plates, the dirt that settles to the bottom of the screen and the floating dirt collected by the skimming boxes is removed by the Dirtecs and clean stock is returned directly to the screen (see drawing). The primary and auxiliary units may be combined into highly flexible systems to meet requirements. They aid in production of better paper and more of it per day at lower cost.

BIRD MACHINE CO., Dept. CP, South Walpole, Mass.

When inquiring specify CP 3319 — see handy form pages 2-3

PROBLEM — Demand for cleaner paper is not easily met under prevailing conditions of raw material supply. Hollingworth & Vose of West Groton, Mass., must produce their high grade specialty line from the kind of stock that is the rule today and which contains a greatly increased amount of dirt.

SOLUTION — The accompanying illustration and that on the cover show installation of new, compact dirt removal equipment at this company mill. The individual units, which are assembled in the number required, bear the descriptive name Dirtec. This particular installation consists of four 6 inch Dirtec units with two 2 inch auxiliary sections shown in the foreground between the first and second and second and third Dirtecs.

The stock is pumped to the Dirtec inlet near the top, the one with the pressure gauge (see cover picture). The gauge reads 35-40 pounds as a rule.

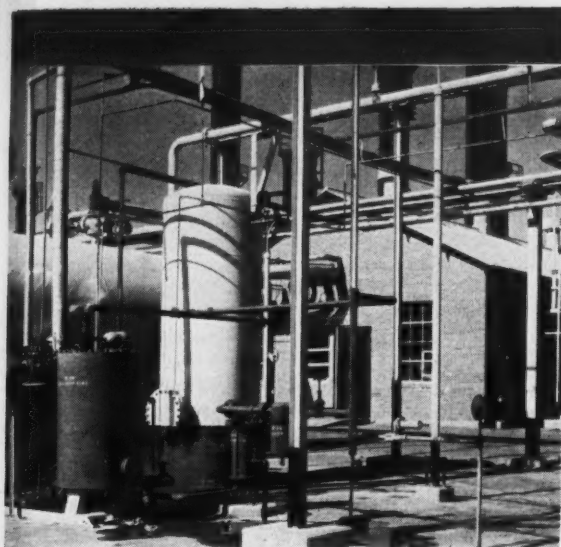
The consistency of the stock may be whatever occurs at the paper machine. The inlet is so shaped as to impart a downward spiral motion to the stock. Entering the vortex chambers, the stock experiences a sharp drop in pressures. This, plus the whirling motion of the stock has the effect of exaggerating the difference in specific gravity between the dirt and foreign matter and the

Continuous Air Drying System Guards Refinery Instrument Airlines

*Air held to specified dewpoint of -10° F.;
each dual unit adsorbs 100 lbs. moisture per day*

PROBLEM — Associated Refineries, Inc., Duncan, Okla., kept their maintenance crew on guard to keep compressed air lines, serving air operated instruments, functioning properly. Usually compressed to pressures ranging from 60 to 150 psig, the air is saturated

with moisture vapor which aftercooler, separator and filters let slip by into air lines. Downstream from the compressor, this saturated air cools by natural radiation and convection. Vaporous moisture condenses as free water and air lines become corroded.



Dual units for continuous air drying

In addition to the necessity for replacement of the corroded air lines, other difficulties develop. Rust is picked up by the air stream and carried into the instruments so that they become clogged. In cold weather the expansion ports freeze and the instruments become inoperative.

SOLUTION — In combatting this problem, the Universal Oil Products Co., Chicago, specified instrument air equipment. Specifications called for a drying unit having a capacity to dry continuously 100 standard cubic feet of air per minute, saturated at 100 degrees F. inlet temperature and 80 psi pressure, to a maximum dewpoint of — 10 degrees F.

To meet these specifications an Activated Alumina System (Pittsburgh Lectrodryer) was installed. This unit is a dual adsorber type (BWC-500) complete with steam reactivation equipment and explosion proof, 110 volt, single phase, 60 cycle blower motor and switch.

The accompanying illustration shows the Lectrodryer in place. The instrument air passes from the compressor aftercoolers and trap system into a surge tank. Before entering the electrodryer, entrained compressor oil is removed from the air by passing it through a Lectrofilter containing an interchangeable and easily cleaned Alumina cartridge.

The air then enters one of the towers of the Lectrodryer, which also contains Activated Alumina. The vaporous moisture is removed by the process of solid absorption. After about eight hours, this tower has absorbed approximately 32 pounds of moisture vapor. The other tower is then switched into drying service and the used adsorber is reactivated by heat from imbedded steam coils. The freshly reactivated adsorber is then ready for another period of drying service.

RESULTS — As a result of this continuous drying of the air to the specified dewpoint of -10 degrees F. or lower, air lines are kept clean and free from corrosion. Instrument maintenance, required because of freezing and clogging due to rust and dirt is eliminated. Operating costs are low and substantial savings in maintenance and trouble free operation are effected.

PITTSBURGH LECTRODRYER CORP., Dept. CP, P.O. Box 1776, Pittsburgh, Pa.

When inquiring specify CP 3320 — see handy form pages 2-3

DECEMBER, 1947

Consider MILTON ROY Automatic Chemical Feed Systems

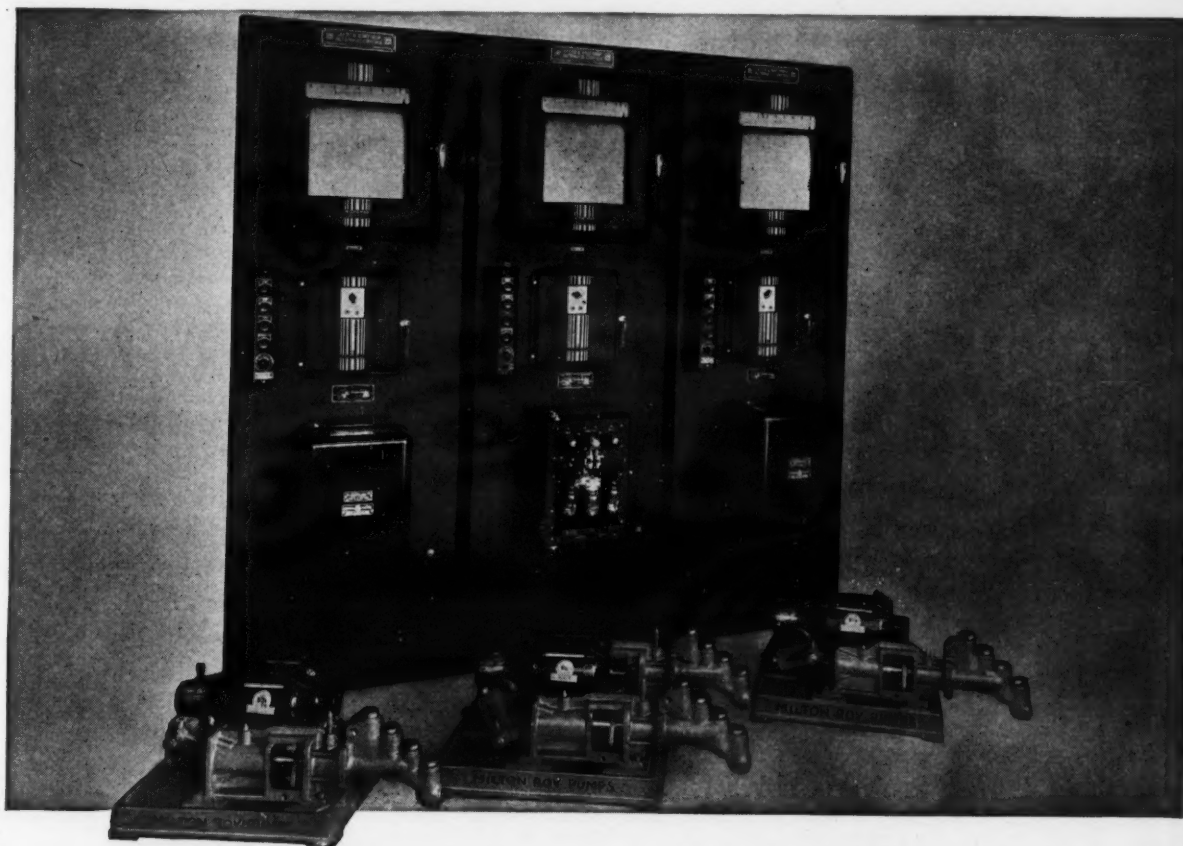
Milton Roy Chemical Feed Systems are used for many processing applications. For boiler feed water treatment these systems add corrective chemicals without introducing excess solids at low loads or danger of under treatment at peak loads. For municipal water supply automatic chemical feed proportional to flow is an ideal control system . . . quickly amortizes its cost in preventing waste of expensive chemicals. Automatic pH control is a recognized necessity in many fields, including water treating, pharmaceutical manufacture, paper making and chemical processing.

Milton Roy Automatic Systems have wide

application also in continuous chemical processing, assuring precise automatic control of the ratio of flow of two or more liquid streams to gas flow in cases where heretofore only batch operations were possible.

The illustration below shows Milton Roy Pumps and automatic pH control equipment for processing penicillin broths.

Write for new Milton Roy Pump catalog No. 461 and Technical Paper No. 54. "An Application of Electronics in Automatic Chemical Feed Systems." Inquiries on specific applications are invited.

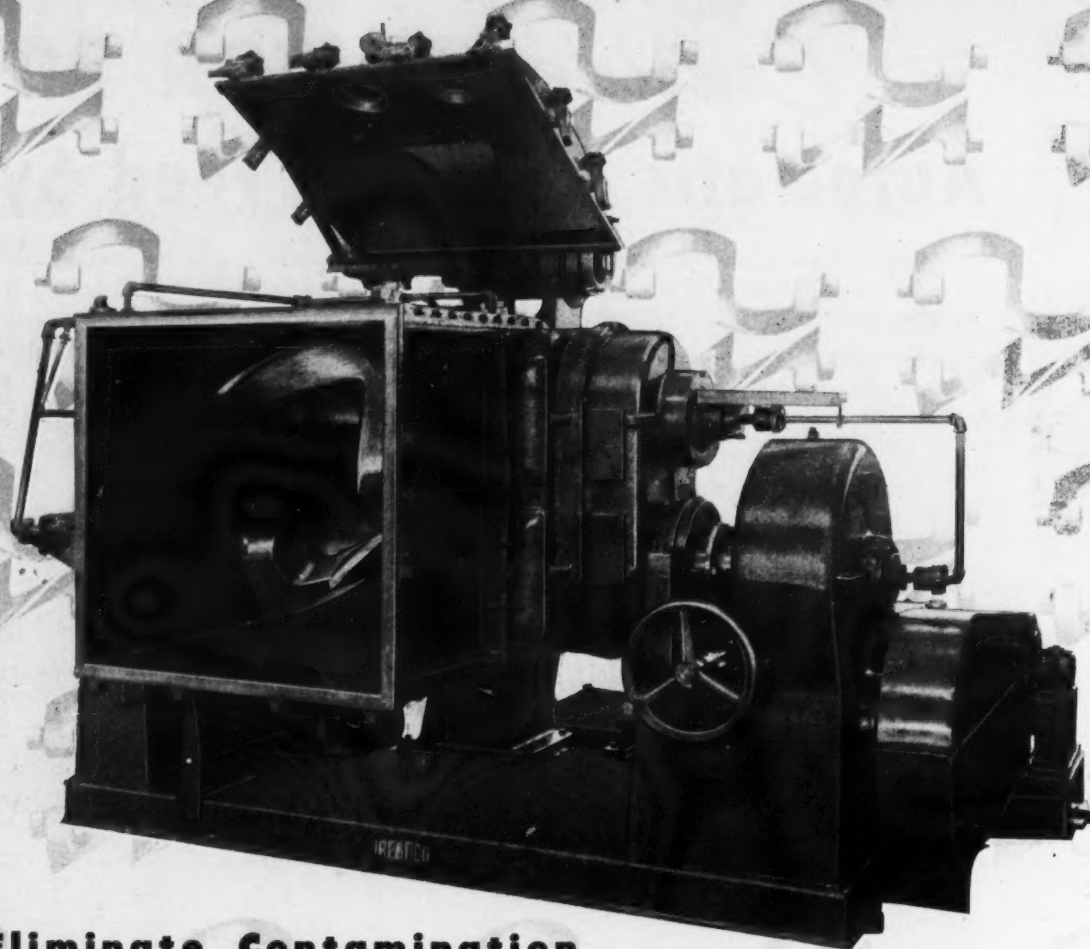


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When inquiring specify CP 3321 . . . see information request blank, pgs. 2-3



Eliminate Contamination



**and Lower Maintenance with
DOUBLE ARM VACUUM MIXERS**

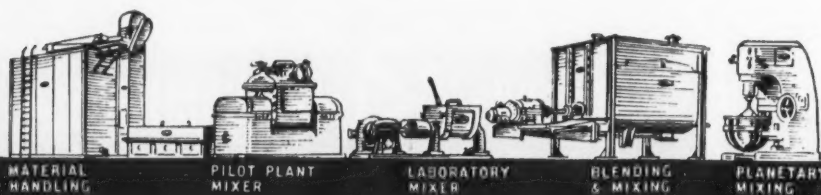
These efficient mixers are of heavy duty construction built of common metal or any commercial alloy, available with or without jackets and of vacuum or non-vacuum design. Vacuum mixer illustrated has single packing

gland construction which eliminates the possibility of contamination or oxidation.

Single, multi or variable speed READCO Mixers are available in sizes ranging from 2½ gallon to 1200 gallon capacity.

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of THE STANDARD STOKER COMPANY, INC. YORK, PA.

New Solutions

Simplified Sand Pump Drive Saves 80,000 Tons of Gravel

*Gears replaced by grooved sheave
and band of drive ropes*

PROBLEM — Alabama gravel company uses a sand pump feeding 5000 tons of sand and gravel per day to the preparation plant. Every three months the pump is moved to a new location. Moving this pump and re-installing it has always required six days. Connection to the engine has been by means of gears and a skilled mechanic and crew have been required to move this pump, reinstall it, lubricate it and put it in operation. Elimination of this loss of six days time and the labor of mechanic and crew was sought as a means to keep production up and overall costs down.

SOLUTION — The pump and engine were mounted in separate skids. One grooved sheave was placed on the motor and another on the pump and the two connected by a band of rope drives. Take-up was provided by home made screw jacks placed between the skids.

RESULTS — With this new arrangement the pump and engine can be skidded into a new location and set up in about 18 hours, a saving of over 4 days' time, — enough to produce 80,000 extra tons of gravel annually. The drive has continued to perform well during more than a year of service.

THE GATES RUBBER CO., Dept. CP,
Denver, Colo.

When inquiring specify CP 3322
—see handy form pages 2-3

★

Tells ABC's of Wrought Iron

Wrought iron, and what it is, why it resists corrosion and withstands shock and vibration, how it is made, how it is bent, welded and threaded, are explained in a 20-page, illustrated booklet.

Title: "The ABC's of Wrought Iron."

A. M. BYERS COMPANY, Dept. CP,
Pittsburgh, Pa.

When inquiring specify CP 3323
—see handy form pages 2-3

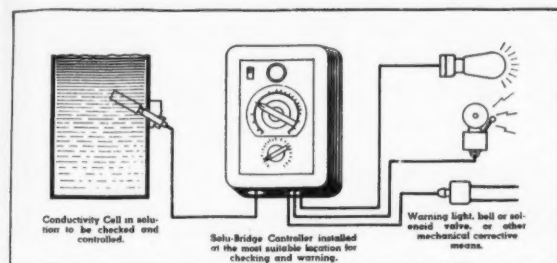
For more information on product at left, specify CP 3324
... see information request blank between pages 2-3.

Controller Guards Purity of Return Steam Condensate

Permits recovery of condensate by checking against possibility of contamination

PROBLEM — A large pharmaceutical manufacturer followed the practice of dumping all condensate from processing equipment. This was necessary because it contained occasional impurities and contamination. If contamination consisted of alkali or acid impurities it would attack piping; organic material would form scale or cause foaming in the boiler.

In case a leak developed in the processing equipment, loss of product could not be readily detected because leakage was not known. In a batch operation, contamination would be blown into the processing equipment thus destroying the product. Other losses occurred when draining because of unknown leakage.



Diagrammatic arrangement of equipment used for automatic solution control

SOLUTION — An electrolytic conductivity controller was installed to maintain automatically a 24 hour watch on the purity of the steam condensate return. This permitted the recovery of all condensate, and it was no longer necessary to dump a large amount.

Controller employed consists of two basic circuits: (1) a Wheatstone Bridge, designed for operation directly from the 115 V. 60 cycle line, with a cathode ray "eye" tube as the balance indicator, independent of line voltage fluctuations or vacuum tube characteristics, and (2) a self contained single pole double throw relay which reacts sharply to the unbalance of the bridge and delivers line voltage A.C. up to 2 amperes for operation of warning signals and electrically operated valves to divert flow as desired.

The unit is mounted in a convenient location in the plant and connected to a conductivity cell which in turn is mounted in the return line to the boiler. Relay terminals in the controller are wired to solenoid valves located in the return lines at such points that, upon signal from the controller that contamination was present, the valves operate to divert the flow of condensate to waste.

RESULTS — Installation of this equipment permitted the recovery of condensate normally wasted. Eliminated possibility of contamination of products. Condensate recovered permitted savings that paid for the conductivity equipment several times over in the first year's operation.

INDUSTRIAL INSTRUMENTS, INC., Dept. CP, 17 Pollock Ave., Jersey City 5, N. J.

When inquiring specify CP 3325 — see handy form pages 2-3

DECEMBER, 1947

Important FACTS ABOUT pH for PROFIT-MINDED EXECUTIVES

WHETHER you are an executive responsible for planning long-range plant production, or for obtaining maximum efficiency from present processing operations, one of the most important advancements you can make is the installation of BECKMAN pH CONTROL. Through the proper application of modern pH control you can make many vital savings . . . savings that will quickly pay for the installation and will continue paying big dividends throughout the years. For example, some of the many benefits resulting from Beckman pH Control include . . .

- . . . saving valuable chemicals through more accurate control of dosages.
- . . . reducing costly corrosion by pre-regulating acid and alkaline solutions.
- . . . speeding up process operations by operating at optimum pH values.
- . . . minimizing rejects by increasing the uniformity of process solutions.
- . . . and many other important savings in time, materials and plant operating costs.

BUT TO MAKE CERTAIN you get the latest, most convenient and most accurate pH equipment available, be sure to specify "BECKMAN" . . .

***** Beckman pH equipment is completely electrometric, eliminating the mess and inaccuracies of colorimetric methods. Simply press a button and the exact pH of any process is instantly shown on a large easily-read dial. *It is the simplest of all pH methods!*

***** With Beckman equipment no time-wasting or troublesome sampling devices are needed. Beckman pH electrodes may be installed directly in vats, tanks, channels or flow lines—and exact pH values read instantly—and continuously, if desired—on the process fluids themselves.

The above are only a few of many Beckman advantages. Beckman pioneered the modern glass electrode pH instrument . . . pioneered the first completely automatic pH indicator, recorder and controller . . . pioneered High Temperature Glass Electrodes which can be used continuously at temperatures as high as 212° F. (100° C.) . . . pioneered High pH Electrodes which permit accurate measurements of high pH values even in the presence of sodium ions . . . and pioneered many other vital advancements. IN FACT, Beckman is the only pH equipment embodying every modern advancement in the field of pH!

***** The accuracy of Beckman pH readings is completely unaffected by human errors in color judgment, by turbidity, oxidizing or reducing agents, by suspended materials, colored process solutions or other variables that affect outmoded colorimetric methods. *Beckman pH readings are universally accurate and dependable!*

***** Unique rugged-type Beckman Electrodes, specially designed for direct immersion in abrasive or suspension-laden fluids, reduce maintenance to an absolute minimum. *Beckman is the most trouble-free of all pH equipment!*

BRING YOUR pH PROBLEM TO US. Our trained engineers will gladly study your problem and recommend the equipment best suited to your particular requirements. No obligation, of course.

BECKMAN INSTRUMENTS

National Technical Laboratories • South Pasadena 11, California

INSTRUMENTS CONTROL MODERN INDUSTRIES

THERE'S A BECKMAN pH INSTRUMENT FOR EVERY NEED



COMPLETELY AUTOMATIC! The Beckman Model R instrument operates directly from standard 110 v. A.C. lines to provide completely automatic pH indication. Also provides for completely automatic pH recording and automatic process control. Can be installed to give accurate pH readings from various stations in plant through one instrument. This is the pH unit being installed by today's most modern plants, large and small.



PORTABLE A.C. OPERATION! The Beckman Model H instrument can be quickly moved from one part of the plant to another and plugs directly into standard 110 v. 50/60 cycle A.C. current. Compact, convenient and extremely simple to operate, the Model H gives instant pH readings on an easily-read dial. It is widely used both for manual pH control of small plants and as an auxiliary instrument on completely automatic pH installations.



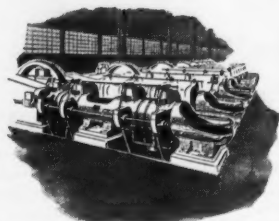
COMPLETELY SELF-CONTAINED! The Beckman Model M is the ideal pH instrument where complete portability is desired. Operating from its own self-contained, long-life power supply, the Model M can be used anywhere in the plant or field, whether convenient to power lines or not. Features the same accuracy, simplicity and operating speed as the Model H, and is also widely used both for manual pH control of small plants and as auxiliary equipment on large automatic installations.

Write for literature on Beckman pH Equipment!

When inquiring specify CP 3326 . . . see information request blank, pgs. 2-3

\$32,700 labor savings on 9 gas engines with Farval

IN a blast furnace power house, the gas engines driving generators were lubricated by hand. Each engine kept one man busy all the time filling and adjusting grease cups for 256 bearings. Nine engines required the full time of 27 oilers per 24-hour day, 365 days a year.



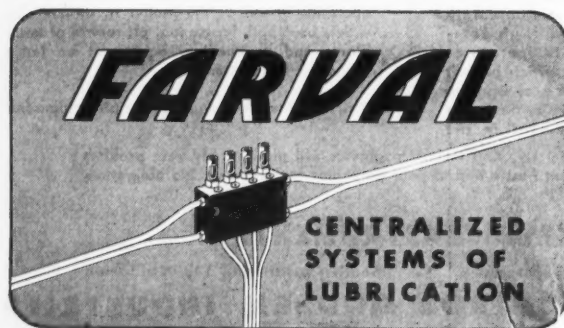
**FARVAL—Studies in
Centralized Lubrication
No. 89**

To reduce the cost of hand oiling, Farval Centralized Lubrication was installed—initially on one engine as a test. One Farval unit lubricated 240 bearings at 4-hour intervals. Another unit lubricated 16 eccentric bearings every 20 minutes. The first year's experience showed that one man with Farval could look after 2 to 3 engines, requiring only 4 oilers per turn for all 9 engines. Result—Farval was ordered for all 9 engines. At the then prevailing rates, the reduction in manpower alone indicated a saving of \$32,700 the first year. The saving in labor paid for Farval in a few months.

Adequate lubrication eliminated all metal-to-metal contact at bearings. There is less drag on the engines. Bearing replacement is no longer a problem. Engines run cooler, operate smoother and quietly. The men are enthusiastic about Farval.

Farval delivers oil or grease under pressure to a group of bearings from one central station, in exact quantities, at regular intervals. Farval is the Dualine System with the Positive Piston Displacement Valve. This valve has but two moving parts and is fully adjustable, with a Tell-tale indicator at each bearing to show the job is done. For a full description of Farval, write for Bulletin 25, The Farval Corporation, 3257 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



When inquiring specify CP 3327 — see handy form pages 2-3

New Solutions OF PLANT PROBLEMS

Machines Pack Soap Flakes at Rate of 75 Cartons per Minute

*Flakes compressed to less than fourth of normal
bulk without mashing*

PROBLEM — The makers of "Chiffon Soap Flakes," Armour & Co., found that the necessary high production rate to meet demand was not being attained. Rapid, uninterrupted and highly accurate filling of containers and their subsequent delivery to case packing section was required.

The complete packaging operation entailed many separate and distinct difficulties, all of which had a bearing on final delivery of the completed item in proper condition and within certain time. These difficulties were: (1) The product was hard to handle. (2) The flake could not be broken or mashed. (3) The containers had to be filled compactly to exacting tolerance. (4) Speeds had to be in excess of 75 packages per minute. (5) The flakes would normally occupy $2\frac{1}{2}$ times the volume they were expected to fit in. Therefore some sort of plunger device was indicated to compress the correct weight of flakes into each package.

SOLUTION — The weighing and filling installation illustrated here has been designed and adapted to meet the afore-mentioned requirements. In addition, special methods were worked out to handle the problems that were particularly peculiar to this operation. For example, proper pre-conditioning of the soap flakes is highly important. Several methods were developed

How Specialized Testing Equipment Cuts Production Costs



**Spectrophotometer
Pays for Itself
in One Project**

Ten years ago the Harshaw Chemical Company developed a new opacifier, Uverite, to replace tin oxide. On this project, a G-E recording spectrophotometer more than paid for itself. But the important news is this: Harshaw's chemists say it has been paying for itself repeatedly since then by giving quick, permanent results for color analysis, comparison work, etc. Write for Bulletin GEA-3680A. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

8000-874

GENERAL  ELECTRIC

When inquiring specify CP 3328 — see handy form pages 2-3

SLY DUST Collectors

Inexpensive to Install and Maintain



**Pay
for Themselves**

A typical SLY Dust Collector inside building with hopper discharge through floor. This filter collects the dust from grain handling equipment. Similar installations collect alfalfa meal.

SLY Dust Control Systems save thousands of dollars yearly in plant maintenance and improved production, in the recovery of valuable materials—in various kinds of manufacturing operations such as crushing, grinding, conveying, loading, separating, and other operations. They are inexpensive to maintain and often repay their cost in a comparatively short time. Ask for Bulletin 98 and tell us your problem.

5

SLY

Superiorities

1. Greater filtering capacity — 2. Taut bags for better dust removal — 3. Bags more easily replaced — 4. Automatic control — 5. Simpler shaker mechanism saving operating and maintenance costs.

SLY THE W. W. SLY MFG. CO.
4754 Train Ave., Cleveland 2, Ohio

When inquiring specify CP 3329 — see handy form pages 2-3

For All the Facts on SPRAY NOZZLES...



Until you have seen this Spraying Systems Catalog, it is likely you have never had all the facts on the thousands of spray nozzles available to you. Consistently changeover to Spraying Systems Spray Nozzles has resulted in greater spraying efficiency and lower costs. In part this is due to advanced hydraulic design... but in big part it is due to no other reason than that Spraying Systems Spray Nozzles number in the thousands of types and sizes... a group so great, that for any given application, there is a spray nozzle to fit your application exactly. Prove this to yourself... write for Catalog No. 22

SPRAYING SYSTEMS CO.
4037 West Lake Street Chicago 24, Illinois

**WE DON'T HAVE TO KNOW
WHAT YOU'RE DOING**

Tell us what you want a spray nozzle to do... and we can meet your specifications. For example, the FULLJET Spray Nozzle shown here provides uniform coverage over a square area. Requirements such as this in spray type... or in volume, atomization, and other characteristics are easily met.

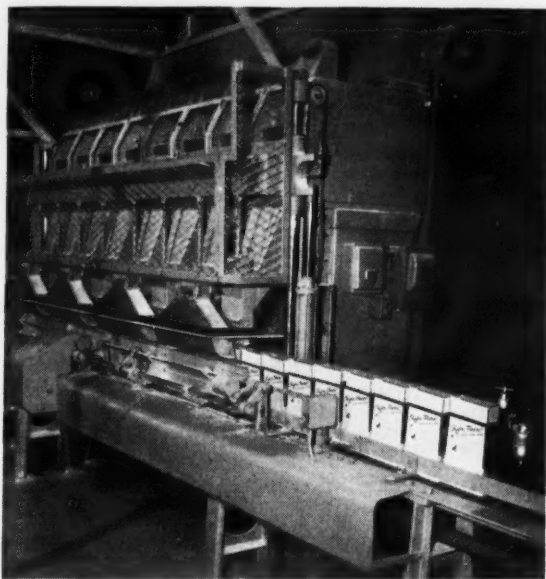


SPECIALISTS IN SPRAY NOZZLE DESIGN AND MANUFACTURE

When inquiring specify CP 3330 — see handy form pages 2-3

where by means of ribbon feed screws the material is evenly distributed to each of the eight sections comprising the weighing machines.

Cartons are automatically delivered to the head of the weigher and the equipment gates these cartons so that they are synchronously driven into the machine and spotted directly under filling spouts. (Controls provide that the machine will not dispense flakes unless a carton is under the spout.) Air activated plungers compress the material in such a fashion that the flakes are not



Eight section scale unit equipped with bulk and dribble trays

broken and packages are discharged at the rate of 75 per minute. Filled cartons are then handled by top sealing equipment. If for any reason the sealing operation is interrupted, filling machines stop automatically.

Each section of the eight section scale unit is comprised of two parallel vibrating feeding trays. These are commonly referred to as the bulk and dribble trays. They dispense, respectively, 80 and 20 per cent of the load in any one package. Both sections of each parallel tray of the unit work on the initial feeding. After the approximate 80 per cent of the bulk load is dispensed, the bulk tray automatically shuts off and the dribble tray brings the package up to the correct tolerance.

Signal lights indicate the functioning of the equipment. As bulk and dribble trays operate, an amber light and a red light are on. When only the dribble tray continues to operate only the red light remains on. Upon the package weight attaining tolerance, the red light goes off and a green light goes on.

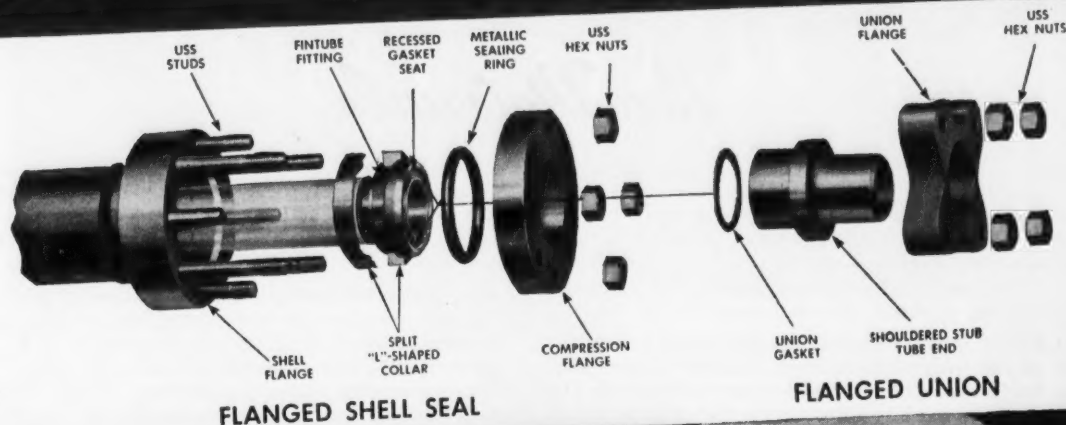
RESULTS — High uninterrupted production attained (in excess of 75 packages filled each minute) with no sacrifice in packaging to required close tolerance. Flakes compressed to fit uniformly in package without breaking or mashing. Automatically controlled shut-offs prevent loss of material and damages in event of operating difficulty or stoppages.

TRIANGLE PACKAGE MACHINERY CO., Dept. CP, 906 Spaulding Ave., Chicago 51, Ill.

When inquiring specify CP 3331 — see handy form pages 2-3

DECEMBER, 1947

THIS EFFICIENT HEAD END ASSEMBLY



featured exclusively in **BROWN FINTUBE** *Sectional Heat Exchangers*

DEVELOPMENT of this flanged head end and its adaption to sectional hairpin heat exchangers — another achievement of Brown Fintube engineers — enables users to avoid packed joints, glands, ground joint seals, screw unions, and all the operating and maintenance troubles resulting from ground joint and screw union construction.

With this construction, the seating surfaces of the shell flange and fintube fitting are in full view. They can be wiped clean of all grit and dirt before closing the seal, — not possible with inside ground joint construction. The soft metal ring overcomes any slight unevenness of the seating surfaces, and permits tight, leak-proof closures to be made time after time.

Enthusiastically endorsed by operating and maintenance departments of oil refineries and chemical processing plants, this ring joint seal is but one of the many exclusive features only Brown Fintube Sectional Heat Exchangers can give you. Brown's exclusive "one-piece" fintubes whose high heat transfer efficiency is maintained undiminished during the entire life of the tube, — our exclusive non-removable rear end construction, and replaceable stud bolting throughout are some of the others.

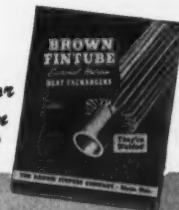
Send today for the fully descriptive catalog, and let our engineers help you in adapting Brown Fintube Sectional Heat Exchangers to your exact and individual requirements.

THE BROWN FINTUBE COMPANY

119 HURON STREET • ELYRIA, OHIO

MANUFACTURERS OF BROWN RESISTANCE WELDED INTEGRALLY BONDED ONE-PIECE FINTUBES, AND FINTUBE HEAT TRANSFER PRODUCTS

Send for
Bulletin
No. 452



When inquiring specify CP 3332 . . . see information request blank, pgs. 2-3

Applications of Aryl Biguanides Suggest Many Unexplored Uses

New Materials

USES — While the aryl substituted biguanides and their salts are old and well known compounds, many of their possible uses are still unexplored. The application of these materials has been the subject of several patents and literature references, as for example: — soap stabilizers, accelerators in rubber vulcanization, strengthening of direct dyes and parasiticides.

DESCRIPTION — Phenyl biguanide is handled in the form of the hydrochloride since the salt is somewhat more stable than the free base. Phenyl Biguanide Hydrochloride is a white solid; molecular weight 213.5; melting point 237° C. Insoluble in cold H₂O; soluble in hot H₂O. Free phenyl biguanide is a strong base, being less basic than guanidine but more basic than ethanolamine. The free base can be prepared easily from the hydrochloride salt.

These aryl substituted biguanides may be used as starting material or intermediate in the preparation of a host of aryl substituted biguanide salts.

Two phenyl biguanide salts have recently been devel-

oped which have shown up quite well in tests as soap stabilizers. These products are the mercaptobenzothiazole salt of mono aryl biguanide and the reaction product of amyl phenyl phosphoric acid with phenyl biguanide.

Mercaptobenzothiazole is a weak acid and forms a well defined crystalline salt with phenyl biguanide which may be recrystallized from alcohol. It may be easily incorporated into soap as a stabilizer or antioxidant. The salt is prepared either by reacting phenyl biguanide with sodium mercaptobenzothiazole or free phenyl biguanide with mercaptobenzothiazole.

The second product which is the reaction product of p-tertiary amyl phenyl phosphoric acid and phenyl biguanide is a mixture of two salts which differ only in the combining ratios. Many other salts can be prepared in a similar manner. Several of these salts have been applied as soap antioxidants and accelerators in vulcanization processes.

Another characteristic of aryl substituted biguanides is

their ability to form complexes with metal ions. This imparts metal deactivating properties to the aryl biguanides. This property has been employed in the manufacture of soaps and gasolines.

As to the use of aryl substituted biguanides as accelerators of vulcanization no biguanides have become commercial rubber accelerators in this country. However, the presence of zinc oxide is necessary for activity in all cases.

o-Tolylbiguanide has been used in Germany in both tire tread and pure gum stocks.

A technical data sheet lists physical properties, gives direction for two methods of preparing a free base, includes formulae and outlines various applications.

AMERICAN CYANAMID CO. (Synthetic Organic Chemicals Dept.), Dept. CP, 30 Rockefeller Plaza, New York 20, N. Y.

When inquiring specify CP 3333 — see handy form pages 2-3

Hydroquinone Derivatives Used As Antioxidant, Stabilizer

Now available in commercial quantities

USES — Hydroquinone mono methyl ether is at present in use as a stabilizing agent in several textile lubricating-oil formulas. Because of the stability of the ether groups, this compound is a promising raw material for organic syntheses, and it has many possibilities in the fields of drugs, cosmetics and dyes.

2,5-ditertiary butyl hydroquinone has been found suitable as a preservative in both synthetic and natural rubber compositions, in addition to serving as an antioxidant in vegetable fats and oils. It is a good polymerization inhibitor for styrene and other resin monomers. Nonstaining and non discoloring, it is particularly useful for stabilizing latices and white stock such as are employed in many mechanical rubber fabrications.

FEATURES — Now available in commercial quantities. Until recently these were obtainable only in laboratory amounts.

DESCRIPTION — Hydroquinone is a well known antioxidant and stabilizing agent for preventing deterioration of fats, oils, and resin monomers. Its low oil solubility and high water solubility are restrictive, however. To overcome these restrictions the two derivatives described here have been produced. Both are considerably more oil soluble and less water soluble than hydroquinone. In addition,

both hydroquinone mono methyl ether and 2,5-ditertiary butyl hydroquinone show less tendency to discolor.

Another derivative, hydroquinone dimethyl ether, is very stable and is unaffected by boiling acids and alkalis. Since the ring hydrogens are labile, it has many possibilities in organic syntheses. The chemical has a very pleasing fragrance of sweet clover. For this reason it is finding

acceptance in the perfume industry, particularly in the formulation of soap perfumes.

It is also useful as a weathering agent for paints and plastics and is of interest for suntan lotions and creams.

Further processing of hydroquinone dimethyl ether leads to amino hydroquinone dimethyl ether, a valuable intermediate in the manufacture of certain naphthol dyes — as is its sister compound, amino hydroquinone diethyl ether. The company states it has made these two compounds commercially available in pure form for the first time. Other hydroquinone derivatives available include toluhydroquinone, hydroquinone diethyl ether, hydroquinone di-n-butyl ether, hydroquinone mono ethyl ether, hydroquinone mono-n-butyl ether and hydroquinone di (beta hydroxyethyl) ether.

TENNESSEE EASTMAN CORP., Dept. CP, Kingsport, Tenn.

When inquiring specify CP 3334 — see handy form pages 2-3

Sodium CMC Unique in Range of Viscosities in Aqueous Systems

Exceptional in this respect among cellulose derivatives; used as emulsifier, etc.

USES — Used in a wide variety of aqueous systems, it serves alternately as an emulsifier, protective colloid, thickener, adhesive, sizing agent, or protective film.

FEATURES — Unique among cellulose derivatives in the wide range of viscosities in aqueous systems. Usable con-

centrations may extend up to between 5 and 10%, depending on the type in question and the viscosity limitations for specific applications. Although its concentrated solutions deviate somewhat from truly viscous behavior, it has much less tendency to gelatinize than other cellulose ethers, and

is quite similar in this respect to many water-soluble natural gums.

DESCRIPTION — Sodium CMC (Sodium Salt of Carboxy-methyl Cellulose, otherwise known as sodium cellulose glycolate) is available in a number of grades. Grade 1 is supplied in damp, fibrous form, containing about 25 parts of moisture per 100 parts of dry solids. The active ingredient, sodium carboxymethyl cellulose, amounts to 60-65% of the solids; while the remainder comprises the indifferent salts, sodium chloride, glycolate, etc. Grade 1 is readily dispersible in water or alkaline solutions, and is suitable for many applications where its volatiles and associated salts are unobjectionable.

Grade 2 is similar to Grade 1 in chemical composition; it differs from the latter, however, in having a relatively low moisture content — 5 to 10% — and being finely pulverized for ease of solution. These two grades are the most economical for many uses.

Grade 4 is refined to an active ingredient content of more than 92%, the remainder comprising sodium chloride, glycolate, etc. It is supplied in three viscosity ranges in each of two solubility types.

Viscosity of Sodium CMC solutions decreases as the temperature is raised, but is not permanently affected by temperatures of 70°C. or lower over a 24 hour period. Heating the dry material for 24 hours at 80°C. has no influence on the viscosity of a solution subsequently prepared.

Even in dilute solution Sodium CMC is an effective emulsifying agent for oil-in-water emulsions, and for aqueous pigment suspensions. This makes it useful in water dispersed paints and latex suspensions.

In paper manufacture, water-soluble CMC added to the Fourdriner improves the dispersion of pulp fibers, with the result that the paper formation is more uniform.

Although Sodium CMC is not a detergent, its admixture with soaps or synthetic detergents improves their efficiency in textile laundering and dish washing.

A technical service bulletin provides a brief summary of possible uses, lists the various grades and their physical properties. Charts plot alteration of viscosities upon additions of acids and the preparation of solutions is outlined.

E. I. du PONT DE NEMOURS AND CO. (INC.), Dept. CP, Wilmington 98, Del.

When inquiring specify CP 3335 — see handy form pages 2-3

★

Polyethylene Glycol Esters

Useful as detergents, plasticizers

USES — In the manufacture of cosmetics, pharmaceuticals, paper, textile finishing materials, paints, inks, emulsion products, plastic articles as well as application in the production of adhesives.

FEATURES — Great flexibility of chemical and physical properties is possible, thus meeting a wide range of requirements.

DESCRIPTION — These polyethylene glycol esters are sold under the name of Quakesters. They are surface active agents of the non-ionic type. Certain specific members are excellent detergents, others are high in emulsifying power. Still other usages are dependent upon the esters as plasticizers and dispersing agents. Dependent on molecular structure, water or oil solubility or dispersability of individual esters varies widely.

QUAKER CHEMICAL PRODUCTS CORP., Dept. CP, Conshohocken, Pa.

When inquiring specify CP 3336 — see handy form pages 2-3

DECEMBER, 1947

AMBERLITE W-1

... a new, water-soluble resin

OUTSTANDING FEATURES

1. Infinite solubility in water
2. Unique insolubilizing properties
3. Resistance to growth of bacteria and fungi
4. Rubber-like consistency on drying
5. Uniformity and stability

PHYSICAL PROPERTIES

Appearance	Amber color, slightly turbid
Viscosity (20% in water)	45-100 poises
Solids	19-21%
Odor	Slightly fragrant
pH	7.0-8.5
Specific gravity at 25°C	1.07

What applications do these properties of AMBERLITE W-1 suggest to you?

Developed by Resinous Products research, AMBERLITE W-1 is a new type polymer with a unique combination of properties that suggests potential uses in strikingly diversified fields of application. For example:

AS A FILM-FORMING MATERIAL, AMBERLITE W-1 is of special interest since it may be insolubilized by heat, formaldehyde or metallic salts. Films show excellent adhesion to porous surfaces.

AS AN ADHESIVE, AMBERLITE W-1 forms re-moistenable films of excellent tack and very long "legs." Films are not affected by bacteria or fungi. It is compatible with starch, casein, polyvinyl alcohol, and other water-soluble film formers.

AMBERLITE and PARAPLEX are trade-marks, Reg. U. S. Pat. Off.

Represented by Cia. Rohm y Haas, S.R.L. Carlos Pellegrini 331, Buenos Aires, Argentina, and agents in principal South American cities

IN PAPER MANUFACTURE, tub addition of the resin, without catalyst, results in marked increases in both wet and dry strength. The wet strength so produced is extremely resistant to acid hydrolysis.

AS A LATEX THICKENER, it is very easily mixed—shows no tendency to decrease in viscosity with age.

AS AN EMULSIFIER, it is of interest in connection with monomeric plasticizers and the PARAPLEX resins.

Do these uses suggest still further applications to you? We'll be glad to furnish samples of AMBERLITE W-1, and to work with you in exploiting its unusual possibilities.

THE RESINOUS PRODUCTS & CHEMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

When inquiring specify CP 3337 . . . see information request blank, pgs. 2-3

HAVE YOU INVESTIGATED VINSOL

**a low-cost thermoplastic
resin with many uses**

If you're looking for both economy and versatility in a resin — it's Hercules Vinsol®!

Low in cost and immediately available, this resin contributes many unique properties to a wide variety of compositions. Vinsol's properties include insolubility in petroleum hydrocarbons, and incompatibility with most petroleum oils and waxes. It is soluble in alcohol, esters, cyclic hydrocarbons, and chlorinated solvents.

Vinsol is compatible with cellulose acetate, nitrocellulose, and ethyl cellulose. It may be dispersed in natural rubber and most synthetic rubbers. Compatibility with zein makes it ideal as a component of shellac substitutes. Combined with lignin, it imparts improved flow. Vinsol can be made soluble with many vegetable oils by cooking Vinsol-vegetable oil to varnish-making temperatures.

Vinsol may be saponified with sodium or potassium hydroxide to form water-soluble soaps. It may be esterified with alcohols, or condensed with formaldehyde.

This economical thermoplastic resin is available in lump, flake, and pulverized form. It is also available in emulsion form of 40 per cent solids content. For more complete technical details, or for assistance in applying Vinsol, return coupon below.



HERCULES

HERCULES POWDER COMPANY
940 Market Street, Wilmington 99, Del.

I am interested in Vinsol Resin for: _____

Name _____

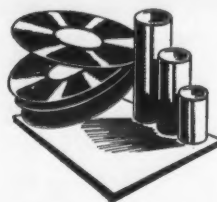
Company _____

Street _____

City _____ Zone _____ State _____

When inquiring specify CP 3338 . . . see information request blank, pgs. 2-3

These and Other Industries
use Vinsol Resin



PLASTICS...

Modifier for ethyl cellulose, shellac, vinyl resins for phonograph records. Modifier and extender for phenol-aldehyde resins in molding powders, and as binders for rock wool insulation batts and laminae ed plastics.



PAPER...

Stiffener and modifier for heavy paper and paperboard . . . binder for lignin-like building boards made from fiber or cellulose products.



CONSTRUCTION...

Vinsol and Vinsol NVX are used as emulsifiers and stabilizers for asphalt emulsions . . . air-entraining agents for Portland cement, masonry cement.



PROTECTIVE COATINGS...

Gives spirit varnishes, from cherry to mahogany, color without the use of dyes . . . low-cost ingredient for dark-colored nitrocellulose lacquers.



ADHESIVES...

Economical ingredient for linoleum and floor tile cements . . . in grease-proof tile.

Materials

Allyl Starch Used as Synthetic Coating, Adhesive or Ink Base

Stores without gelation when dissolved in solvent; available in moderate samples

USES — Synthetic coating, shellac substitute, protective and decorative coating on wood, glass and metal. Also as a lacquer and varnish for furniture, a thermosetting adhesive, printing ink base, textile finish and leather dressing.

Other possible uses are as a grease-proofing for paper, for paper impregnation and in nail polishes. Since it forms a rigid plastic when vulcanized, it has attracted interest as a laminating agent.

FEATURES — Since allyl starch is a solid which polymerizes upon contact with air, it is shipped and stored in solution. Samples are available in benzene, lacquer solvent or in 95% xylene- 5% isobutanol. The solvent used largely determines the viscosity of these solutions, the viscosity at 25° C. of a 40% solution in benzene being 386 centistokes, in lacquer solvent 83 centistokes and in a mixture of 95% xylene and 5% isobutanol, 360 centistokes. Once allyl starch is dissolved in a solvent, it is protected from air and may be stored for indefinite periods without danger of gelation.

DESCRIPTION — This allyl starch is an unsaturated ether of starch which contains approximately 1.7 allyl groups per glucose unit. It is soluble in alcohols, ketones, esters, halogenated hydrocarbons, nitroparaffins, ethers, benzene and in other aromatic hydrocarbons when some hydrogen bond-forming solvent is present. It is insoluble in aliphatic hydrocarbons.

Although an allyl starch film cures gradually over a period of several weeks, elevated temperatures will accelerate the process, and cured films will result after two hours at 95° C., after one hour or less at from 130° to 150° C. Polymerization can also be accelerated at normal temperatures by use of 0.2% cobalt or other metallic dryers as catalysts.

Ordinarily, allyl starch films must contain from 10 to 20% of a plasticizer to prevent brittleness. But when cured, they are hard, have excellent gloss and are resistant to organic solvents. Their water resistance may be improved by baking them for one hour at 130° to 150° C. without a catalyst.

GENERAL MILLS, INC., Dept. CP, Minneapolis, Minn.

When inquiring specify CP 3339 — see handy form pages 2-3

★

Poly Diaryl Amine, Economical Anti-oxidant and Stabilizer

Used in rubber, paint, plastic industries; available in commercial quantities

USES — Useful in rubber, paint and plastic industries. Suggested as a replacement for other antioxidants such as phenyl-beta-naphthylamine. This product is also finding application as a stabilizer and polymerization inhibitor as well as a plasticizer.

FEATURES — Provides reliable protection against heat deterioration, flex cracking and oxygen aging.

DESCRIPTION — PD-10 is a viscous liquid, amber in

CHEMICAL PROCESSING Preview

Materials

color, with a characteristic aromatic odor. Its molecular weight is approximately 400.

A comparison of antioxidants in a natural rubber tread recipe is given below:

A COMPARISON OF ANTIOXIDANTS in a Natural Rubber Tread Type Recipe

	Compound No.	Compound No.	Compound No.
	1915 A	1915 B	1915 C
No. 1 Smoked Sheet	100	100	100
EPC Black	50	50	50
Zinc Oxide	5	5	5
Sulfur	3	3	3
E1-Sixty	0.45	0.45	0.45
Santocure	0.30	0.30	0.30
Resinex L-4	2	2	2
Stearic Acid	3	3	3
Phenyl-beta-Naphthylamine	—	—	1
PDA-10	—	1	—

The test specimens were cured at 287° and tested at RT before and after ageing 96 hours, Oxygen Bomb at 70° C—300 lbs.

UNAGED

Compound	Time of Cure	Modulus at 300%	Ult. Tensile	Ult. Elong.
No. 1915 A	30 min.	1200	3700	603
(Control)	40 min.	1330	3770	580
	60 min.	1540	3930	563
Compound	30 min.	1120	3840	623
No. 1915 B	40 min.	1300	4150	620
(1% PDA-10)	60 min.	1490	4210	610
Compound	30 min.	1090	3690	620
No. 1915 C	40 min.	1310	4030	613
(1% PBNA)	60 min.	1400	3980	607

AGED

Compound	Time of Cure	Modulus at 300%	Ult. Tensile	Ult. Elong.
No. 1915 A	30 min.	730	660	287
(Control)	40 min.	—	500	200
	60 min.	—	550	210
Compound	30 min.	1200	2070	480
No. 1915 B	40 min.	1360	2240	470
(1% PDA-10)	60 min.	1490	2090	430
Compound	30 min.	1110	1830	463
No. 1915 C	40 min.	1270	1970	453
(1% PBNA)	60 min.	1350	1930	423

Available in commercial quantities.

BENSON PROCESSING ENGINEERING CO., Dept. CP, Eden, N. Y.

When inquiring specify CP 3340 — see handy form pages 2-3

Additive Improves Oil Wear, Lubricity, Despite High Temperatures, Pressures

"Alox 162," described as a universal oil additive which improves lubricity of all types of lubricating oils, increasing their life under high temperatures and high pressures, is the subject of a 7-page technical report.

Literature includes 3 pages of data from Lauson engine tests, including duplicate data with figures reduced to an hourly basis for comparison purposes. Product is described as providing necessary wetting characteristics for completely coating bearing surfaces, preventing corrosion; reducing temperatures and filling requirements of pressure lubrication for gears; and preventing undue bearing-wear and piston-scoring and scuffing in diesel engines. Technical Bulletin No. 2.

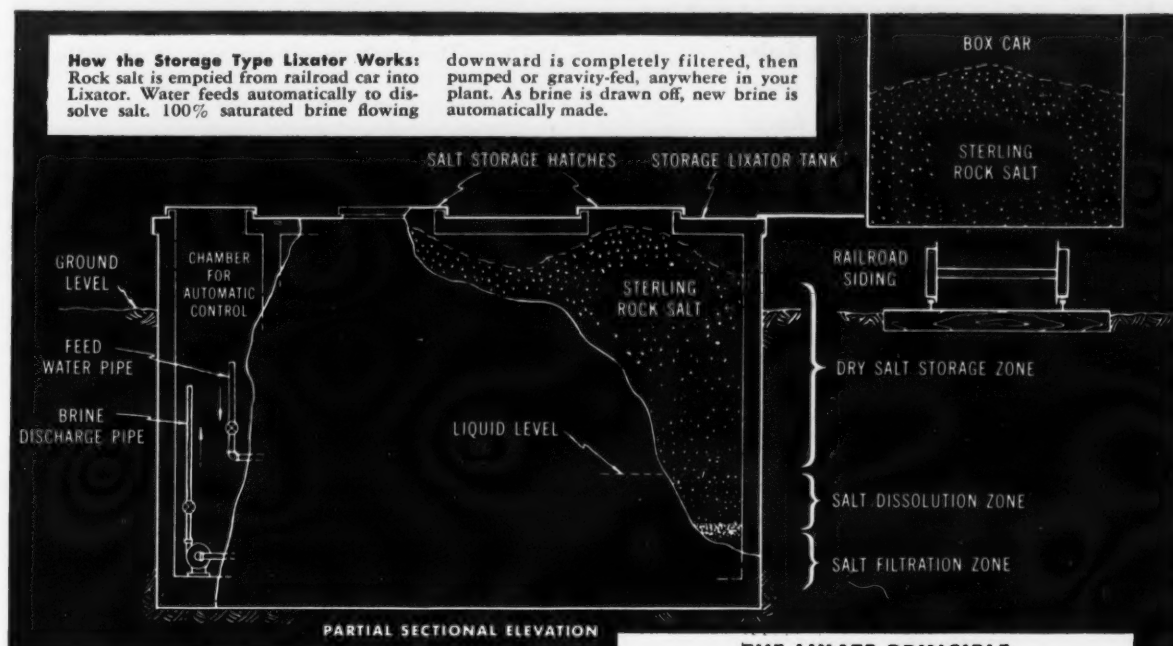
ALOX CORPORATION, Dept. CP, 3927 Buffalo Ave., Niagara Falls, N. Y.

When inquiring specify CP 3341 — see handy form pages 2-3

DECEMBER, 1947

For a Continuous Supply of Clean, Crystal-Clear, 100% Saturated BRINE IN GREAT VOLUME

The Storage Type Lixator Provides Maximum Savings!

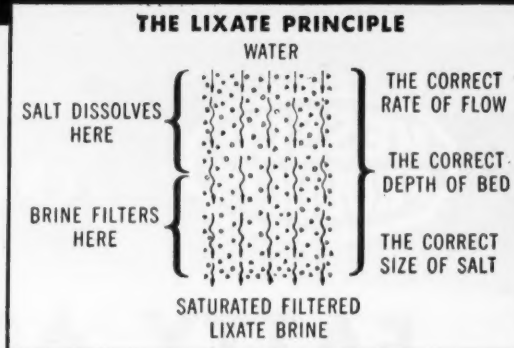


Do you use brine in large quantities? Then we urge you to consider the important economic advantages of the Storage Type Lixator!

It drastically lowers production costs... virtually wipes out the costs of handling, storing and measuring salt and of making, distributing and diluting brine... uses economical Sterling Rock Salt.

An exclusive development of International Salt Company engineers, the Storage Type Lixator centralizes all salt storage and brine-making operations at one convenient location, and distributes 100% saturated, crystal-clear brine by pipe lines to every point of use in your plant. At any point of use, the brine is quickly and easily diluted as required.

Through its engineering staff, International offers complete engineering counsel on designing and building



the Storage Type Lixator to fully meet your specific brine requirements. A representative thoroughly familiar with the uses of brine in your own industrial field will gladly give you complete information. Inquiries are cordially invited.

For more information about the Storage Type Lixator, simply fill in and mail this coupon to:

INTERNATIONAL SALT COMPANY, INC.
Dept. CP-12, Scranton, Pa.

Name _____
Firm _____
Street _____
City _____ State _____

The LIXATE Process
Reg. U. S. Pat. Off.
for making brine
INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

When inquiring specify CP 3342 . . . see information request blank, pgs. 2-3

B. F. Goodrich Chemical Company

has for sale these GOOD-RITE chemicals



In Commercial Quantities

Phenyl B Naphthyl Amine • Distilled • Commercial

Mixed Mono-and Diheptyl Diphenyl Amines

Isopropoxy Diphenyl Amine

p Hydroxy Diphenyl Amine

N-Nitroso Diphenyl Amine

Diphenyl p Phenylene Diamine

Di B Naphthyl p Phenylene Diamine

Monobenzyl Ether of Hydroquinone

Di Isopropyl Dixanthogen

Mixed Ethyl and Dimethyl Mercaptothiazoles

Mixed Aliphatic Thiazyl Disulfides

Polymerized Trimethyl Dihydro Quinoline



In Pilot Plant Quantities

Dibenzyl Ether of Hydroquinone



For additional information please write

B. F. Goodrich Chemical Company A DIVISION OF THE B. F. GOODRICH COMPANY

Department CG-12, Rose Building, Cleveland 15, Ohio

When inquiring specify CP 3343 — see handy form pages 2-3

Materials

Resinous Polyesters Unique In Improving Vinyl Compounds

Permanently soft and thermoplastic in nature; very stable

USES — These resinous polyesters are exceptionally serviceable plasticizers for polyvinyl chloride, the vinyl copolymer resins, and elastomers of the acrylonitrile-butadiene type in applications where the maximum in permanence is required in the finished product. Valuable in free films for handbags, luggage and similar applications. Other applications are in extruded compounds, cable lacquers, paper coatings, gasket stocks, can linings and closures as well as cements and asphalt compounds.

FEATURES — These polyesters combine many of the desirable features of the ester-type plasticizers with the permanence and added resistance to extraction that are obtainable only in a synthetic resin plasticizer. Low Temperature flexibility, oil resistance, low flammability and heat stability. Give good performance where freedom from lacquer lifting is a prerequisite.

DESCRIPTION — Important among such plasticizing agents are Paraplex G-25 and G-40. Besides producing compounds showing low temperature flexibility and water resistance these compounds also exhibit essentially zero volatility, no plasticizer migration, low heat deformation and fine processing properties.

Paraplex G-25 is a very viscous liquid which pours slowly at room temperature. It is readily soluble in esters, ketones,



DIAMOND *CHLOROWAX RESINOUS CHLORINATED PARAFFIN

Chlorowax—the Diamond chlorinated plastic—when combined with proper pigments, provides a protective coating, which retards combustion of the surface to which it is applied. Thus, Chlorowax gives a flame resistant quality to paints, textile coatings, paper coatings, etc.

Contents of Drum 250 lbs.

*Reg. U. S. Pat. Office

DIAMOND ALKALI COMPANY
PITTSBURGH 22, PA. and Everywhere



**CHEMICALLY
INERT**

HIGHLY ADHESIVE

NON-TOXIC



SEND
for your
copy
of this
Bulletin
TODAY!

When inquiring specify CP 3345 — see handy form pages 2-3



CHEMICAL SPECIALTIES

FATTY ACID ESTERS

DIBUTYL TARTRATE

BUTYL STEARATE

BUTYL OLEATE

BUTYL "CELLOSOLVE"*

STEARATE

METHYL "CELLOSOLVE" OLEATE

*TRADEMARK OF C & CCC

STEARATES

PALMITATES

OLEATES

RICINOLEATES

LAURATES

for the

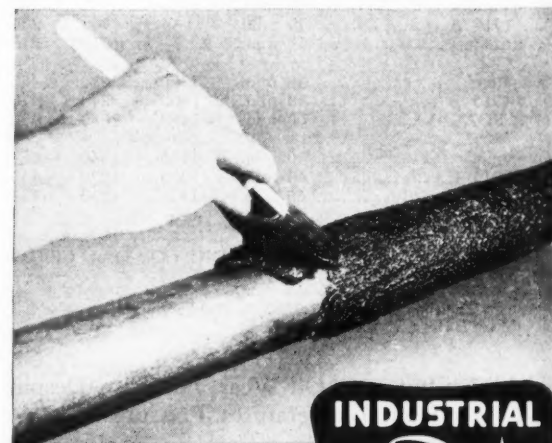
Textile, Cosmetic, Pharmaceutical, Petroleum, Plastic and Allied Industries

KESSLER CHEMICAL CO., INC.

ESTABLISHED 1921

STATE ROAD and COTTMAN AVE., PHILADELPHIA 35, PA.

When inquiring specify CP 3344 . . . see information request blank, pgs. 2-3



COVER PIPES TANKS, WALLS

Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating. **STOPS CONDENSATION DRIP!** NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums, ready for use.



TRY NoDRIP
Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

J. W. MORTELL CO. 530 Burch St., Kankakee, Illinois

When inquiring specify CP 3346 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

Materials

aromatic hydrocarbons. The resin is not soluble in either ethyl or butyl alcohol, but tolerates (imbibes) up to 25% by weight of the former and up to 30% of the latter.

It is highly compatible with polyvinyl chloride, vinyl copolymer resins, Buna N type synthetic rubbers, chlorinated rubber, natural rubber, cellulose acetate. It has limited capability with Buna S (up to 30% G-25) Neoprene GN (up to 20% G-25), Polystyrene (up to at least 10% G-25).

It is incompatible with cellulose acetate, cellulose acetate butyrate, ethyl cellulose, methyl methacrylate, Polyvinyl butyral, etc.

Paraplex is a clear light-colored, very viscous liquid which may be poured slowly at room temperature. Paraplex G-40 is slightly less viscous than Paraplex G-25 at room temperature and thins appreciably faster on heating. Its solubility characteristics are rather similar to those of Paraplex G-25. It is not as compatible with as wide a variety of materials as Paraplex G-25.

A booklet gives detailed information on both of these resins discussing physical properties, uses, processing characteristics, milling technique, use as a sole plasticizer, etc.

RESINOUS PRODUCTS & CHEMICAL CO., Dept. CP, Washington Square, Philadelphia 5, Pa.

When inquiring specify CP 3347 — see handy form pages 2-3

★

Pipe-Fittings of Polyethylene In Sizes Up To 2 Inches

Feature chemical resistance and high impact strength; easy to thread and assemble

USES — For use wherever corrosion-resistant pipelines are needed, — laboratories and processing plants; in handling acidulous waters; in cooling water systems. It may even be used as electrical conduit.

FEATURES — Low moisture, low temperature properties, high impact strength. Easily cut to length, threaded and assembled. At normal temperatures the threaded fittings will withstand pressures up to 50 lbs. to the sq. in. without leakage. In some cases they may be used at pressures as high as 100 to 150 lbs. to the sq. in.

DESCRIPTION — Polyethylene screw type fittings available in sizes from 1/2 in. to 2 in. Pipe and fittings are insoluble in all common solvents at temperatures up to 50 to 60 degrees C., with the exception of chlorinated solvents and aliphatic and aromatic hydrocarbons at elevated temperatures.

AMERICAN HARD RUBBER CO., Dept. CP, 11 Mercer St., New York 13, N. Y.

When inquiring specify CP 3348 — see handy form pages 2-3

★

Reveals Cures for 15 Maintenance Problems

15 building maintenance problems, and their cures, are described and illustrated in a pocket-size folder, printed in colors. These include leaky roofs, spalled walls, worn floors, broken driveways, and floors damaged by acid, grease and water. "15 Building Maintenance Problems."

STONHARD COMPANY, Dept. CP, 401 N. Broad St., Philadelphia 8, Pa.

When inquiring specify CP 3349 — see handy form pages 2-3

DECEMBER, 1947

Three Hooker Chemicals That Help Make Thousands



Samples of Caustic Soda, as it comes from the Hooker "S" Cell, are checked carefully in the laboratory for strength and purity.

- ✓ LIQUID CHLORINE
- ✓ CAUSTIC SODA
- ✓ MURIATIC ACID

Hooker chemicals numbering over a hundred, and thousands of other products get their start from Caustic Soda, Liquid Chlorine and Muriatic Acid made by Hooker. Your supplies of these basic heavy chemicals are made possible to a large extent by the Hooker Type "S" electrolytic cell, designed and developed by our own engineers.

Caustic Soda, Liquid Chlorine and Muriatic Acid are produced and shipped from our plants at Niagara Falls, New York, and Tacoma, Washington. Helpful technical service and prompt shipping are corollary to the uniform high quality of these Hooker products.

Data sheets and other literature describing Hooker Chemicals are available upon request. If you don't have our latest General Products List, Bulletin 100, why not write today for your copy?

HOOKER CHEMICALS

**HOOKER
ELECTROCHEMICAL
COMPANY**

15 Forty-Seventh St., Niagara Falls, N. Y.
New York, N. Y. Wilmington, Calif. Tacoma, Wash.

Aluminum Chloride Paradichlorobenzene Monochlorobenzene Sodium Benzoate Sulfur Chlorides Sodium Sulfide Sodium Sulphhydrate

When inquiring specify CP 3350 . . . see information request blank, pgs. 2-3

NOW...

Buna S Latex, PRE-VULCANIZED (UBS B-1700)

- ... 2500 lbs. tensile strength minimum
- ... dry, non-tacky film
- ... no adding of vulcanizing agents ... no heat treatment necessary other than drying

PROPERTIES

1. Dried film tensile strength 2500 lbs. per sq. in. minimum
2. Dried film ultimate elongation 700% to 800%
3. Viscosity Thin
4. Specific gravity 1.012
5. pH Value 9.3 to 9.8
6. Solids content 33%

APPLICATION

1. Back coating of rugs and fabrics to impart non-slip and fibre binding characteristics.
2. Coating and impregnating of fabric, paper and wadding for strength, water resistance, and base for further coating.
3. Preparation of molds utilizing properties of flexibility and freedom from further heat treatments.
4. Dipped goods where deposition of film is complete on drying.
5. Adhesive for paper, fabric and leather where bond is improved by film deposit of cured Buna S.
6. As an additive to natural latex, as well as to buna and neoprene, for extension and modification.

P.S.

It is proposed to supply pre-vulcanized Buna S Latex in a more concentrated form if the demand is great enough to warrant it.

Write for detailed data sheet.

UBS

UNION BAY STATE
Chemical Company Inc.

50 HARVARD STREET, CAMBRIDGE 42, MASS.

When inquiring specify CP 3351 — see handy form pages 2-3

Materials

Formulate 40% & 60% Solutions of 2,4,-D With New Agents

Amines specially prepared for this purpose

USES — For solubilizing 2,4,-D.

DESCRIPTION — These amines are identified by the trade name Sharsol. Two Sharsols are now available in tank car and smaller quantities.

Sharsol 221 has been especially prepared for the formulation of 40% solutions of 2,4,-D. Sharsol 193 is recommended for higher concentrations.

With Sharsol 193 60% solutions can be made. These highly concentrated solutions have very low freezing points ($-42^{\circ}\text{C}.$), and need no thinners. They may be made without the use of steam, since the heat of reaction is sufficient for processing.

SHARPLES CHEMICALS INC., Dept. CP, 123 South Broad St., Philadelphia 9, Pa.

When inquiring specify CP 3352 — see handy form pages 2-3

High Styrene-Low Butadiene Copolymer Is Versatile Product

Synthetic shoe soling, electric insulation, coatings, molded items a few applications

USES — Specifically developed for use as a stiffening agent in the manufacture of synthetic shoe soling. Labo-

Magnified view of IngAcad Sheet to show proportion of stainless to mild steel



for any application where stainless steel is needed only on the contact side nothing beats

INGACIAD
STAINLESS-CLAD STEEL

Available in sheets 18 to 8 gauge, and in plates $\frac{3}{16}$ " to $\frac{1}{4}$ ", inclusive. Full details on request.

INGERSOLL Steel Division • Borg-Warner Corporation
310 South Michigan Avenue, Chicago 4, Illinois
Plants: Chicago, Illinois; New Castle, Indiana; Kalamazoo, Michigan

When inquiring specify CP 3353 — see handy form pages 2-3

Corrosion Proofing

IN SOME OF AMERICA'S LARGEST PLANTS

- * "Prufcoat on floors and pump supports in sulfuric acid concentration plant—no failure after more than three years."
- * "Entire concrete building coated with Prufcoat—no trace of failure due to blistering, peeling or chipping in over five years."
- * "Prufcoat on concrete piers and steel beams subjected to muriatic acid fumes—no deterioration in over six years."

* Actual Prufcoat reports. Names of these plants upon request.



The Prufcoat film formed after polymerization has virtually a zero acid number, saponification number and water absorption rate.

PRUFLOAT PROTECTIVE COATINGS are applied by brush by your own maintenance crew and air-dry in a matter of minutes. One material protects all surfaces—concrete, structural steel, floors, pipes, tanks and machinery. No Prime Coat is needed. Two or three coats of Prufcoat provide Positive Protection against acids, alkalis, alcohol, oil, water and weather—at a cost per gallon only slightly more than ordinary paint. No matter what your corrosion-proofing problem may be, Prufcoat can save you maintenance dollars. Write today for descriptive bulletin. Prufcoat Laboratories Incorporated, 63 Main St., Cambridge, Mass.



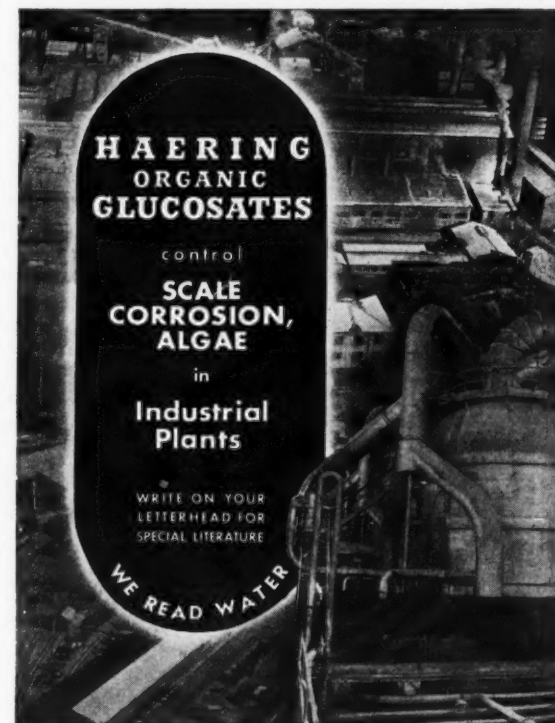
PRUFLOAT
PROTECTIVE COATING

SPECIFICATIONS

- ✓ Acid Proof
- ✓ Alkali Proof
- ✓ Alcohol Proof
- ✓ Oil Proof
- ✓ Water Proof
- ✓ Flame Proof

One material for application to All surfaces

When inquiring specify CP 3354 — see handy form pages 2-3



HAERING ORGANIC GLUCOSATES

control

SCALE CORROSION, ALGAE

in

Industrial Plants

WRITE ON YOUR LETTERHEAD FOR SPECIAL LITERATURE

WE READ WATER

D. W. HAERING & CO., Inc.
GENERAL OFFICES:
205 West Wacker Drive, Chicago 6, Illinois

When inquiring specify CP 3355 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

Materials

ratory tests now indicate that the resin is particularly well adapted for such other applications as electrical insulation, protective coatings and for molded items such as injection molded appliance plugs.

FEATURES — Unusual impact resistance, excellent resistance to water absorption, increased hardness and good electrical properties are some of the characteristics that this new resin imparts to natural and synthetic rubbers.

DESCRIPTION — This high styrene — low butadiene copolymer is named Good-rite Resin 50 and is available in commercial production quantities. Sold as a white powder, it has a specific gravity of 1.045 and may be softened and sheeted on a mill at temperatures of 150° to 225° F., or injection molded at temperatures of 380° to 440° F. using a 45 second molding cycle.

When used in small amounts, as a compounding ingredient for GR-S or natural rubber, Good-rite resin, up to certain limits, gives increased abrasion resistance, modulus and resistance to cut growth. Hysteresis and compression set are generally increased while rebound is decreased.

B. F. GOODRICH CHEMICAL CO., (Hycar Sales Dept.), Dept. CP, Rose Bldg., Cleveland 15, Ohio.

When inquiring specify CP 3356 — see handy form pages 2-3

★

Non-Ionic Emulsifying Agents Feature Unusual Flexibility

Meet specific problems in manufacture of paper, textiles, inks and plastics

USES — In manufacture of leather, paper, textiles, inks and plastics. Also in cosmetics, paints and adhesives.

FEATURES — Flexibility of chemical and physical properties due to alteration of the length of either the fatty portion or the ethylene oxide polymer.

DESCRIPTION — These "Nopalcol" products are surface active agents, — long chain ethylene oxide polymers of fatty acids. Being non-ionic, the "Nopalcol" materials are not affected by hard water, salts, or dilute acids which usually cause instability when soaps, sulfated oils or sulfated fatty alcohols are used.

NOPCO CHEMICAL CO., Dept. CP, Harrison, N. J.

When inquiring specify CP 3357 — see handy form pages 2-3

★

Low Cost Stainless Piping Systems Use Light Wall Stainless Welding Fittings

Fabrication of light wall, stainless steel welding fittings is described in a 4-page, illustrated folder. Reasons are given why it is possible to build low cost stainless steel piping systems with fittings of this type. Each type of fitting is clearly shown, including stub ends, reducers, return bends, etc.

A chart of standard sizes is presented, with notations on their availability. Fittings are deep drawn from sheet. They are described as capable of taking a good weld without losing corrosion-resistance. "Light Wall Stainless Welding Fittings."

JOHN B. ASTELL & COMPANY, Inc., Dept. CP, 90 W. Broadway, New York 7, N. Y.

When inquiring specify CP 3358 — see handy form pages 2-3

DECEMBER, 1947

Want the answer to Low Cost

Supported Catalysts



THE answer is, let Porocel Corporation put your catalyst on activated bauxite.

Our carrier—Porocel—with a price range of 2½ to 4½ cents per pound, costs much less than other supports (frequently high-priced synthetic materials). Its rugged, granular character eliminates the need for costly forming steps—permits direct impregnation by simple, inexpensive techniques. The result is savings of 20-50% in initial cost of the ready-to-use catalyst.

Porocel is inert in the great majority of cases. The degree of purity in low-iron, low-silica Porocel means almost complete freedom from unwanted side reactions. Hence, Porocel catalysts exhibit clean-cut reactions and long life. Result? Low unit operating costs.

With a surface area of about 225 square meters

per gram and porosity averaging 55% of its total volume, Porocel is capable of adsorbing large quantities of many inorganic salts or other compounds. Impregnation of the active ingredient is uniform and widely dispersed over areas easily reached by gaseous and liquid reactants—most important in surface catalysis.

Catalysts are made in mesh sizes ranging from 2/4 to 20/60 or in special grades when desired. And these tough, uniform particles withstand wide ranges of temperature, pressure and flow—stand up under severe handling.

As pioneer developers of bauxite-supported catalysts, we have produced efficient materials for others. Now, let us show you how economically it can be done for you. Outline the details to: Attapulugus Clay Company (Exclusive Sales Agent), Dept. E, 210 West Washington Square, Philadelphia 5, Penna.



ACTIVATED BAUXITES • SUPPORTED CATALYSTS • CATALYST CARRIERS • ADSORBENTS • DESICCANTS

When inquiring specify CP 3359 . . . see information request blank, pgs. 2-3

MEET THE "Acid Test" with *Acid-Causticbond*

FOR PROTECTING

Masonry • Metal • Concrete • Wood

against direct contact with
corrosive acids and caustics

A brush-applied, air-dry coating to prevent corrosion of tanks, floors, and equipment used for storage, or processing strong caustics and corrosive acids. Acid-Causticbond will help you meet the "Acid (and alkali) Test" in protecting equipment. Acid-Causticbond resists:

Acetic Acid	Bleach Solutions	Caustic Soda
Hydrofluoric Acid	Chlorine	Calcium Chloride
Lactic Acid	Cyanides	Tri-Sodium Phosphate
Muriatic Acid	Formaldehyde	Escaped Flue Gases
Nitric Acid	Salt Solutions	Pickling Solutions
Oleic Acid	Sodium Hydroxide	Fruit and Vegetable Juices
Phosphoric Acid	Sodium Hypochlorite	Lubricating Oils
Sulphuric Acid	Sulphur Dioxide	Refrigerants

OTHER W & W PROTECTIVE COATINGS FOR INDUSTRY

RUBBERIZED DAMPCOAT ENAMEL

A full rubber-base enamel for wet or dry surfaces. Resists chemicals, food acids, caustics, and the lime-action of concrete. Withstands constant wetness. Stays white even on steam pipes and at sub-zero temperatures. Fire and Fungus resistant. Dries in one hour.

RUBBER-COAT MASTER FLAT

For use on wet or damp walls or new plaster. Can be scrubbed like an enamel and stains can be removed by washing. Withstands chemical fumes and constant wetness. Primes and finishes in one coat. Fire and mildew resistant. Dries in one hour. White and 8 colors.

Send for our "Chemical Resistant Coatings Portfolio" which describes these Protectioneered Products in detail



Dept. C-32
Greenleaf & Leon Streets
Boston 15, Mass.

When inquiring specify CP 3360 — see handy form pages 2-3

Materials

Stabilizer Useful in Making Clear Plastics

In two types for vinyl chloride or vinylidene chloride copolymers

USES — For use with vinyl chloride or vinylidene chlorine polymers. Particularly adapted for use where it is desired to produce clear plastic.

FEATURES — Either of two types in which this additive is marketed can be tailored to fit the particular characteristics of the plastic being used.

DESCRIPTION — Co-precipitated lead orthosilicate and silica gel in the form of a soft, white powder. Plumb-O-Sil A is produced with a refractive index of 1.64 to 1.67, making it an ideal stabilizer for use in vinylidene chloride plastics. Plumb-O-Sil B, with a refractive index of 1.58 to 1.60, is designed for use with vinyl chloride-acetate plastics of approximately similar refractive index. Either type may be used when the vinyl or vinylidene plastic application requires a stabilizer without tinting strength and one which will cause minimum impairment either to dye or other pigment additions.

Physical properties of the two types:
— Plumb-O-Sil A, — lead content (7PbO) . . . 60 to 61; silica content (%SiO₂) . . . 39 to 40; specific gravity . . . 4.1; refractive index . . . 1.67; Plumb-O-Sil B, lead content (5PbO) . . . 49 to 50; silica content (%SiO₂) . . . 50 to 51; specific gravity 3.3; refractive index . . . 1.58 to 1.60.

NATIONAL LEAD CO., Dept. CP, 111 Broadway, New York, N. Y.

When inquiring specify CP 3361
— see handy form pages 2-3

★

"Chemistry of Organic Cyanogen Compounds" Is Fundamental

This 460-page text deals with chemistry fundamentals of organic cyanogen compounds. Syntheses, methods of preparation, special phases, etc., are mostly incidental to this theme. Author: Vartkes Migrdichian. Price: \$12. Remit direct to publisher, name below, or inquire on inquiry slip.

REINHOLD PUBLISHING CORPORATION, Dept. CP, 330 W. 42nd St., New York, N. Y.

When inquiring specify CP 3362
— see handy form pages 2-3

for
HOT
filtration . . . *Nylon* **FILTER CLOTH**

These are its advantages

- High Heat Resistance
- Exceptional Tensile Strength
- Exceptional Abrasion Resistance
- Excellent Resistance to Fungi
- Diversified Chemical Resistance

Perhaps Nylon Filter Cloth is the answer to one of your hot filtration problems. Its melting point is 482°F. and, while the composition and concentration of the solution being filtered affect its resistance in varying degrees, it can be generally classified as having excellent heat resistance.

Write for literature and pilot test samples of FM Nylon Filter Cloth today.

Filter Media Corporation

SPECIALISTS IN FILTER CLOTH FOR INDUSTRIAL FILTRATION

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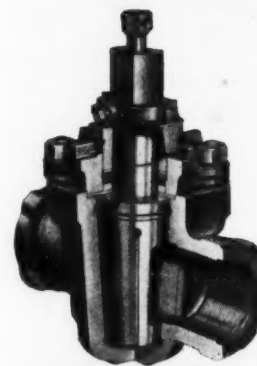
SALT LAKE CITY

When inquiring specify CP 3363 — see handy form pages 2-3

4-WAY VALVE PROTECTION

"Sealdport" lubrication
in Nordstrom Valves

1. Seals the valve
2. Prevents sticking
3. Protects the seat
4. Prolongs valve life



Lubrication is necessary to assure perfect valve performance in chemical services. The design and characteristics of Nordstrom valves make operation positive and guard against corrosion and erosion. Ask for descriptive Bulletin.

NORDSTROM *Lubricated* **PLUG VALVES**

**NORDSTROM VALVE DIVISION —
Rockwell Mfg. Co.**
400 North Lexington Ave., Pittsburgh 8, Pa.
Sales Offices in principal cities.



When inquiring specify CP 3364 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

New Organo-Silicon Chemicals Now Available

*Trichlorosilane, Silicon Tetrachloride,
Hexachlorodisilane, Octachlorotrisilane*

USES — Trichlorosilane (SiHCl_3) is finding immediate use as a new starting material in the field of organo-silicon chemistry. It is one of the few chemicals which can be used to synthesize the organo-silicones. The silicon chlorides (silicon tetrachloride, hexachloride, and octachloride) are also being used because of their high activity and specific structure in the synthesis of organo-silicones and organo-silicon halides, R_4Si , $\text{R}_3\text{Si-SiR}_3$ and $\text{R}_3\text{Si-Si(R)}_2\text{-SiR}_3$ resulting, for example, from the complete addition of an alkyl or aryl group.

Other potential uses, in addition to their application in synthesis, are as cementing agents for iron, convenient forms for the transportation of anhydrous hydrogen chloride gas, for degassing metals, waterproofing coatings, hardening and preserving agents for concrete, stone and other porous mineral substances, in the production of acid chlorides from monobasic organic acids, for use in the preparation of smoke screens, and for the preparation of pure silica and silicon.

FEATURES — With the exception of SiCl_4 , this is the first time any of these chemicals have been made commercially available. They are being produced now in limited commercial quantities for use in research and development work. Their outstanding feature is their intense chemical activity, characterized by their immediate hydrolysis in contact with moist air.

DESCRIPTION — Trichlorosilane (also known as silicochloroform) is a mobile, colorless, fuming liquid, boiling at 31.8°C . and melting at -126.5°C . It is highly volatile, with a vapor pressure of 218 mm. at 0°C . It has a liquid density of 1.35 at 0°C . and a flash point of less than 20°F . It is miscible in all proportions with ether, carbon disulfide, carbon tetrachloride, chloroform, and benzene and dissolves large quantities of paraffin. It decomposes instantly in water and alcohol, forming respectively silicoformic anhydride, $(\text{HSiO})_2\text{O}$, and the esters, $(\text{RO})_2\text{SiH}$. Organic groups readily replace the chlorine atoms by means of the Grignard, Wurtz and other reactions.

The other silicon chlorides have properties similar to the above and react in analogous fashion.

ANDERSON LABORATORIES, INC., Dept. CP, 1415 East Maumee St., Adrian, Mich.

When inquiring specify CP 3365 — see handy form pages 2-3

★

Tells Varnish, Paint Vehicle Formulae Using Synthetic Resins with Tung, Soya, Linseed

Five formulations typical of the applications of Pentalyn resins with tung, linseed and soya bean oils are presented, along with similar information, in a 6-page manufacturer's publication.

Formulae are given for a 22-gal. floor paint vehicle, 20-gal. enamel vehicle, two 25-gal. general-purpose varnishes, and a 40-gal. spar varnish. "Syntips" No. 10.

HERCULES POWDER COMPANY, Dept. CP, Wilmington 99, Del.

When inquiring specify CP 3366 — see handy form pages 2-3

DECEMBER, 1947



TO

**Speed Reactions • Save Money
Reduce Depreciation • Prevent Contamination**

Hydrogen sulfide, carbon dioxide, ammonia, and similar compounds generally cause no appreciable attack on Alcoa Aluminum refinery and process equipment, even when moisture is present. Depreciation costs are reduced, equipment shows more in-service time without repairs, and replacement is postponed for longer intervals.

Alcoa Aluminum Condenser Tubes are safe to use with many chemicals and most types of cooling waters. The high heat conductivity of aluminum permits rapid heat transfer, allows condensers, towers, and

heat exchangers to work at high thermal efficiency.

Because aluminum does not rust, many chemical products that must be kept water-white and free from contamination are safely processed and stored in aluminum tanks.

Our engineers will be glad to tell you where Alcoa Aluminum is now being used, and help work out the details of using it in your plants. ALUMINUM COMPANY OF AMERICA, 1731 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in 54 leading cities.

MORE PEOPLE WANT MORE ALUMINUM FOR MORE USES THAN EVER



When inquiring specify CP 3367 . . . see information request blank, pgs. 2-3

Pneumatic Vacuum Conveyor System Reduces Product Loss 10 Per Cent

Material Handling

Handles bulk materials from box car to storage bins or from any processing stage to another

USES — Equipment is used in the handling of bulk material. Adaptable to conveying all types of materials from grinders, including abrasives. Can be used for handling of bulk materials from box car to storage bins and for handling materials from any processing stage to another — vertically or horizontally.

FEATURES — Injurious or objectionable dusts cannot escape through piping connections. Piping life is prolonged. Removes frictional heat, aerates and deodorizes the product. Increases grinder capacity by removing back pressure created by elevators or conveyors.

DESCRIPTION — System operates under vacuum and material does not pass through the pneumatic fan located on the top of the collector, thus the fan is not subjected to wear or abrasive action of coarse materials. Materials are actually conveyed in suspension and friable materials are handled with a minimum of breakage.

Efficiency of the system makes vent losses low. In the majority of installations, a filter collector is not necessary. No residues remain in the system.

Each installation is engineered to meet the requirements and is adaptable to all types of grinders. Complete details are contained in descriptive literature.

SPROUT, WALDRON & CO., DEPT. CP, Muncy, Pa.

When inquiring specify CP 3368 — see handy form pages 2-3

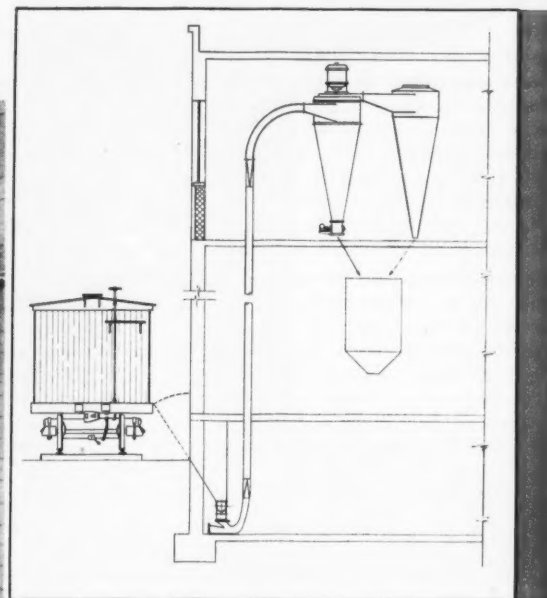
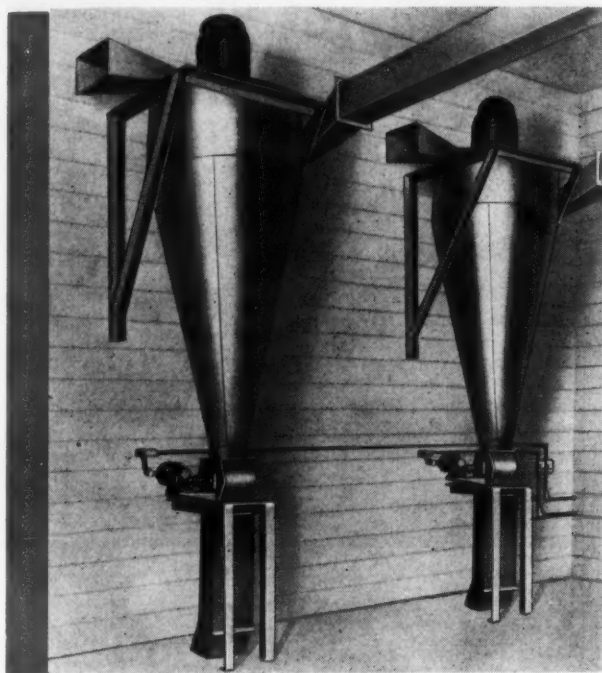


Diagram shows arrangement of equipment employed to handle bulk material from box car to storage bin

Pneumatic material handling system may be used with hammer and attrition mills.

Mobile Dumper Lifts Materials and Liquids into Tanks or Kettles

Handy time-saver moves 50,000 lbs. per hr., manufacturer reports; is 5, 6, 7 or 9' high

USES — For lifting and dumping liquid, solid or semi-solid materials of a free-flowing nature into bins, kettles or other receptacles. For bagged or loose materials.

For chemicals, light industrial products, stampings, grit for tumblers. Handles sugar, flour, nuts, fruits, powdered or liquid milk, chocolate, etc.

FEATURES — Saves time and labor. No exposed gears, chains or belts. Designed to stop instantly without coasting, and at the same time prevent cable from piling up. Simplified mechanically. Easily moved.

DESCRIPTION — In operation, material is placed in skip of dumper, switch is turned, and load is automatically lifted and emptied into bins, kettles, etc.

Dumper is equipped with 500-lb. capacity box-type skip for liquids or loose materials, or an open-front skip for bagged materials. Skips may be stainless steel if desired. Open-front skip contains spikes which hold opened bag in place while lifting and dumping.

Manufacturer reports 100 trips an hour are possible, and that as much as 600 cu. ft., or 50,000 lbs., may be lifted and dumped within that time. Unit is built in four different dumping heights: 5, 6, 7 and 9' — Lift is operated by 1/2 hp motor. A 15' extension cord with convenience plug is furnished.

Built-in equipment includes reversing drum control with up, stop and down positions; solenoid-operated brake; grooved hoisting drum for leading cable in correctly.



Mobile lifter and dumper

CHEMICAL PROCESSING Preview

The dumper occupies 36 x 65" floor space, and has 5" ball bearing swivel casters. Descriptive folder contains full details.

COLSON EQUIPMENT & SUPPLY COMPANY, Dept. CP, Dept. CPR-1, 1317 Willow St., Los Angeles 13, Cal.

When inquiring specify CP 3369 — see handy form pages 2-3

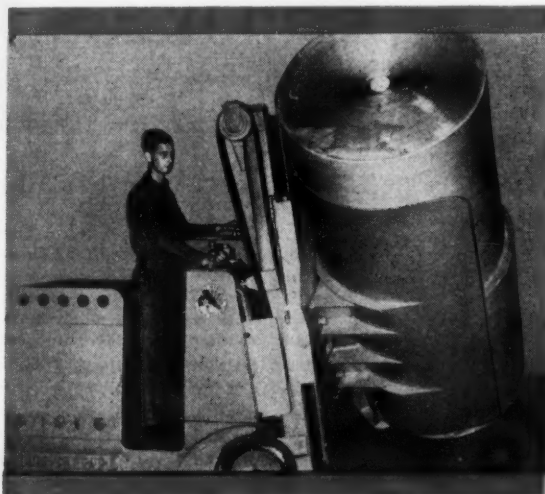
★

Fork Truck Attachments Handle Paper Rolls and Pick-up Bins

Hydraulically operated rotating carriage is of compact design

USES — This rotating carriage and other attachments may be used on the maker's power fork trucks for handling paper rolls, picking up castings, scrap metal, coal, sugar, grain, etc. and dumping them where desired.

FEATURES — When used in conjunction with paper roll attachment, only 90 degrees of the full rotation is required; quickly adjustable stops are used to limit travel in this manner.



Paper roll attachment for fork truck

DESCRIPTION — Hydraulically operated rotating carriage easily installed on maker's trucks — electric, gasoline, or gas-electric. The compact design keeps load close to front wheels for maximum utilization of the inch-pound rating of the truck.

The paper roll attachment for use with this carriage consists of a full curved backplate, designed to fit the contour of the rolls, and a polished and ground toe plate with a beveled leading edge for entering under the headings of the paper rolls without damaging them. No pallet or dunnage are needed and rolls may be picked up in a vertical position and deposited horizontally and vice versa.

The various attachments include a partial backplate, toeplate and forks for handling paper rolls, also conventional forks for use with a bin or dump box for picking up small objects and miscellaneous materials.

LEWIS-SHEPARD PRODUCTS, INC., Dept. CP, 291 Walnut St., Watertown 72, Mass.

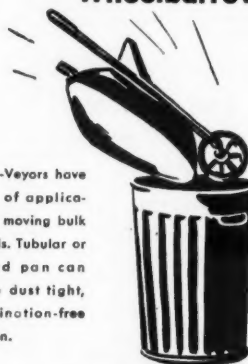
When inquiring specify CP 3370 — see handy form pages 2-3

DECEMBER, 1947

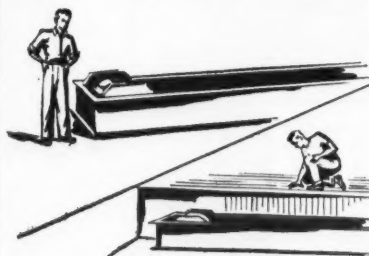


Throw Away Your Wheelbarrows

Ajax Lo-Veyors have dozens of applications in moving bulk materials. Tubular or covered pan can provide dust tight, contamination-free operation.

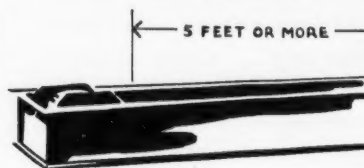


On, Above, or Below Floor



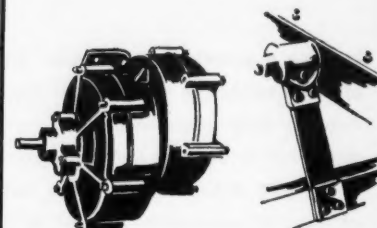
Can be installed under railroad tracks for unloading hopper cars... can be set on the floor... can be installed below floor level... can be suspended from wall or ceiling. Ajax Lo-Veyors are complete units delivered ready to use.

Short or Long Carries



You can use Ajax Lo-Veyors for moving material distances of 5 ft. and up. Material can be moved from one operation to the next... plant layouts can be rearranged

Unharmed by Abrasives



Ajax Shaler-Shaker drive unit is completely enclosed and runs in oil. Rubber bushed conveyor pan supports require no lubrication and are unharmed by abrasive materials. Ajax Lo-Veyor design eliminates conveyor belts, rollers, idler pulleys and bearings.

You need no longer think of conveying equipment as expensive. In fact, Ajax Lo-Veyors not only cut costs of handling bulk

material but are low in first cost and low in operating and maintenance costs.

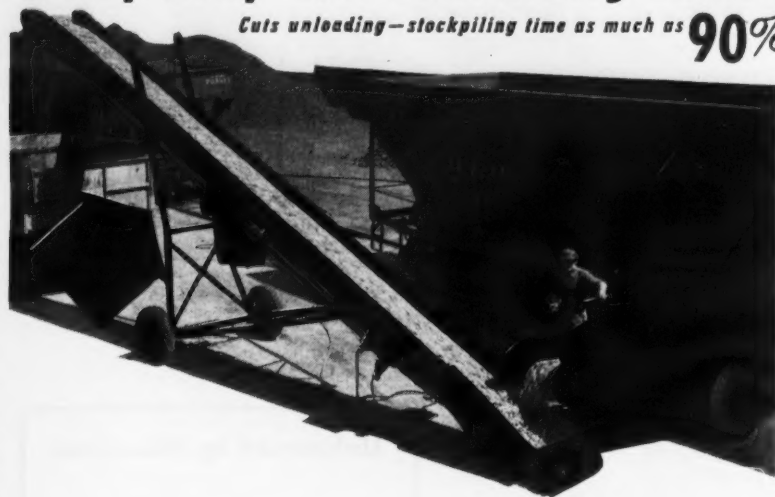
Under present conditions, savings on handling material are one of your most important opportunities for cost reduction. Ajax Lo-Veyors are being used by the Who's Who of industry for moving dry materials,—explosive and non-explosive. Their record of satisfaction is one of their strongest recommendations. Write telling us what you have to move.

AJAX FLEXIBLE COUPLING CO. INC.
WESTFIELD, NEW YORK

When inquiring specify CP 3371 . . . see information request blank, pgs. 2-3

At Last! an all-material, heavy-duty car unloading team!

Cuts unloading—stockpiling time as much as **90%**



Imagine a portable car unloader and stockpiler that can clear a car of stone or rock in 45 minutes! Imagine an unloading "team" that requires only one man's time . . . that frees expensive clamshells and other equipment for more productive work . . . a team rugged enough to deliver up to three tons per minute through years of service, yet economical enough to pay off on intermittent work!

That's what Barber-Greene offers you in the new 358 and 363. Now for the first time you can truly eliminate hopper-car unloading problems, no matter what bulk materials you're handling!

EXCLUSIVE NEW ADVANTAGES!

For All Materials . . . Crushed stone, granite chips, sand, gravel, agricultural lime, coal, road stone, coke, foundry sand, cinders, clay, chemicals, fertilizers, ores, wet concrete, etc.



For All Users . . . Road contractors, building supply yards, concrete products plants, foundries, quarries, railroads, ceramic plants, industrial power plants, chemical plants, etc.

363 Stockpiler-Loader



358 Unloader



Barber-Greene

AURORA, ILLINOIS

Send for Full Details!

Use the coupon, or write for complete data, photos and specs on the 358 and 363.

Barber-Greene Company
Aurora, Ill.

- ☐ Send details on the 358 and 363
☐ Have a B-G representative call

Name
Street
City State

When inquiring specify CP 3372 — see handy form pages 2-3

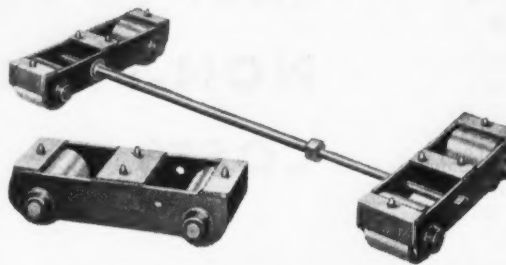
Material Handling

"Skid-Rol" Dollies in 5-Ton Size

Extension bar useful feature in moving standard boxes and skids

USES — For moving heavy freight, machinery, dies, and a wide variety of loads in processing, manufacturing plants, foundries, warehouses, etc.

FEATURES — Auxiliary extension bar is especially valuable in plants using standard boxes or skids for shipping.



Adjustable dollies and extension bar

DESCRIPTION — This 5 ton capacity size is a recent addition to the standard 10-12 ton dollies. Size of each "5 tonner" dolly is 15 1/4" x 6 1/8" x 4" high with 3 5/8" diameter solid steel rollers. Roller bearings lubricated with Zerk fittings, 15 pins to each bearing full

Coal Handling for Small Heating Plants

SIMPLIFIED, CLEAN
ECONOMICAL

—with a Detroit Electric Hoist, Coal Bucket, and a short length of monorail.

Installations are paying for themselves in actual dollars saved. Added advantages; Ease in Handling, Time Saved, Clean Surroundings.

Get the facts from Detroit Hoist Bulletin No. 805.



DETROIT HOIST & MACHINE CO.

8222 MORROW ST., DETROIT 11, MICH.

When inquiring specify CP 3373 — see handy form pages 2-3

You, too,
can reduce
Pumping
Troubles

with
SHRIVER
Diaphragm Pumps

Some Users' Comments

● On a very abrasive process fluid, "Our materials are hard to handle by ordinary pumps and maintenance costs have been high. Our Shriver Pumps have reduced these troubles greatly. We sent one of these pumps to our Brazilian plant where trouble-free operation is important because of lack of skilled mechanics."

● On formaldehyde, "Ours is a tough material to work with and the ready cleaning of the Shriver Pump, freedom from leaking and packing troubles are important to us. Our only charges so far have been for replacement of diaphragms." And that at minor expense.

● On saturated salt solution containing 40% metallic oxides, "It's the only type that will handle our sludges. High discharge pressure and resistance to corrosion and abrasion are important. Repairs and shutdowns are less and performance is better than for any other type we ever used."



This Bulletin
tells how
such results
are obtained.
Write...

T. SHRIVER & COMPANY, INC.

846 Hamilton St. • Harrison, N. J.
When inquiring specify CP 3374
— see handy form pages 2-3

Material Handling

length of roller. All bearing surfaces hardened. Frame of structural steel arc welded. Extension bar telescopes in iron pipe.

Minimum span of pair of dollies with extension bar is 36" overall. Maximum span, 56". When inverted, dollies can be used for rolling girders, heavy objects.

The "5 tonner" model is available in pairs, singly; with or without cleats and with or without extension bars. Capacity 5 tons per pair.

TECHTMANN INDUSTRIES, Dept. CP, 714 W. Wisconsin Ave., Milwaukee, Wis.

When inquiring specify CP 3375 — see handy form pages 2-3

★

Unloads Rolls of Paper Wedged in Freight Cars

Automatic fork-lift truck clamp handles rolls up to 76" long; high-stacks them to 155"



Roll clamp fork-lift truck accessory

USES — Roll clamp accessory for fork lift trucks. For automatically unloading rolls of newsprint wedged in freight cars. For handling various-length rolls and for high-stacking them, on ends, for storage.

FEATURES — Overcomes the problem of jarring rolls loose in order to unload them from freight cars, in which they have become wedged in transit.

Automatic, fast and easy, at the same time providing a simple means of high-stacking rolls of paper on end to conserve storage space. Will not "ripple" paper.

DESCRIPTION — Unit consists of a blade at bottom which is inserted beneath the roll, a cradle-type back-rest which provides curved support to the roll while being handled on fork lift truck, and an hydraulically-operated clamp which is raised or lowered in same manner as standard fork lift truck carriage.

Roll clamping plate, 20" diameter, lowers hydraulically for clamping. Unit is designed to handle rolls up to 76" long, while adjustable extensions permit handling smaller rolls. Rolls may be stored vertically to 155" overall height.

TOWMOTOR CORPORATION, Dept. CP, 1226 E. 152nd St., Cleveland 10, Ohio.

When inquiring specify CP 3376 — see handy form pages 2-3

DECEMBER, 1947

PALMER-SHILE

MATERIALS HANDLING EQUIPMENT

Designed to do Specific Jobs Better

Combination

TRUCK and

DRAIN RACK

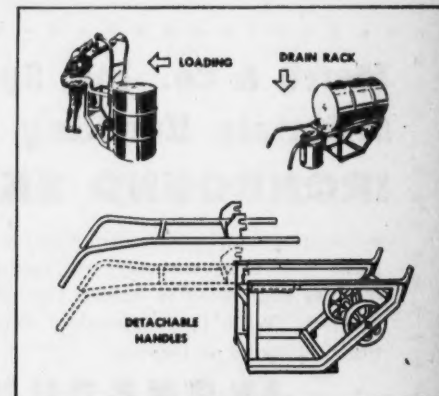
Loads Automatically

Weights only 90 pounds, yet handles barrels weighing up to 1,000 lbs. with surprising ease. Sturdy frame, free rolling wheels and proper balance make light work of trucking the heaviest drums...

Tilt truck against drum, drop sliding steel grip over top of rim—rock truck back to wheeling position and loading is automatic.

To use as drain or storage rack detach handles to conserve floor space. Slight downward push on truck handles raises wheels and lays rack on floor in convenient draining position. One pair of handles will serve any number of trucks.

Heavy angle iron frame, tubular handles, all welded construction.



TWO STYLES

With and Without Detachable Handles

Item NS-506 (Handles welded to frame)	\$42.50
Item NS-506 DH (Truck Complete with detachable handles)	44.50
Item NS-506 R (Item NS-506 DH without handles)	32.50
Item NS-506 H (Detachable handles only, for use with NS-506 R)	12.00

Order by "Item," Prices f.o.b. Detroit.

Barrel and Box Grab

Item NS-288 \$55.25

For picking up any wood or steel barrel, box or container, 40" diameter or less. 2000 lb. capacity. Rigid toggle construction. Weighs 35 lbs.

Drum and Barrel Sling

Item B-205 \$15.00

Handles barrels, drums, kegs—anything with a lip. Half ton capacity. Heavy welded chain and forged grab hooks. Weighs 8½ lbs.

Carboy Truck

Item B-488 M \$38.00
Item B-488 R \$42.00

Gripping yoke makes loading automatic. Hardened steel studs grip load—no slipping. All steel welded construction—20" wide, 48" in length—capacity 500 lbs. Wt. 75 lbs.

Barrel Truck

Item S-911-M \$33.50 (Metal Wheels)
Item S-911-R \$38.50 (Molded-on rubber wheels)

Automatically loads barrels up to 1,000 lbs. Heavy tubular welded construction—sliding grip. wide—wt. 85 lbs.

Barrel and Box Skid

Light, sturdy, all steel welded construction. Handles heaviest barrel or box. 14" wide.

Item B-470-8 (8 feet) .. \$22.00
Item B-470-10 (10 feet) 27.50
Item B-470-12 (12 feet) 33.00

Palmer-Shile Co.

16016 Fullerton Avenue

Detroit 27, Michigan

When inquiring specify CP 3377 . . . see information request blank, pgs. 2-3

Pay Less for Labor!

MODERNIZE
**DRUM,
BARREL
HANDLING**

With a
**SABIN
One-Man
TRUCK**

AVOID COST OF HELPERS!
Heavily loaded barrels and drums (weights up to 800 pounds) are easily and quickly picked up and moved by ONE MAN with a Sabin Type "L-3" Barrel Truck. Trucker simply runs truck up to container, hooks on at top, and pulls back on handle to pick up load. Exclusive Three-Wheel Feature provides foot pedal for easy "break-over", insures better load support and balance — and permits loaded truck to stand alone.

WRITE FOR BULLETIN NO. 45-A
The Sabin Machine Co.
6534 Carnegie Avenue
CLEVELAND 3, OHIO



TYPE "L-3"

When inquiring specify CP 3378 — see handy form pages 2-3

Merck & Co., Inc. Speeds Materials Handling with IRONBOUND SKIDS

• You, too, can increase the efficiency of your plant with adequate skid and semi-live skid facilities engineered to handle your particular problems. Write for information, today. Illustrated literature on request.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
60 HOFFMAN PLACE
HILLSIDE, NEW JERSEY

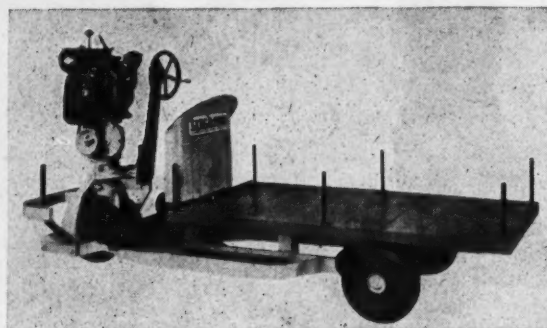


When inquiring specify CP 3379 — see handy form pages 2-3

Material Handling

2-1/4 hp Utility Truck Moves
Bulk Loads, Equipment to
1500 lbs.

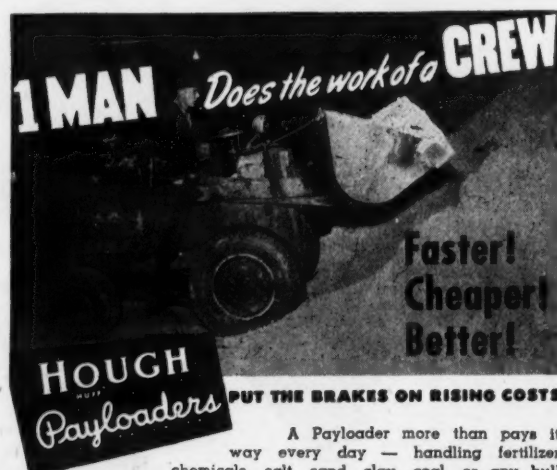
Platform-type unit may be equipped as mobile tool
shop, fire fighter, pressure greaser



Platform utility truck

USES — Gasoline-powered platform utility truck for odd-job problems in material handling. For awkward, manually-loaded material such as bagged cement, long pipe or bar stock, tote pans, tools, or permanent equipment up to 1500 lbs.

Also for use as a mobile unit for permanent fire fighting

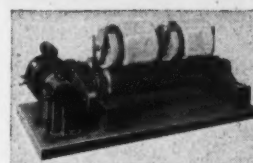


A Payloader more than pays its way every day — handling fertilizer, chemicals, salt, sand, clay, coal, or any bulk material — working inside of box cars, ship holds, bins — loading, carrying, and dumping — doing scores of jobs formerly requiring slow and costly hand labor. An Eastern chemical plant unloads a box car of phosphate at the rate of 6 tons per hour saving 88 manhours and cutting unloading time in half; a large Southern fertilizer plant unloads 99½ tons of chemicals in 4 hours and 20 minutes. Remarkable records, but every day performances for a Payloader. Get the complete story. Send today for Bulletin 164 on the Model HA Payloader.

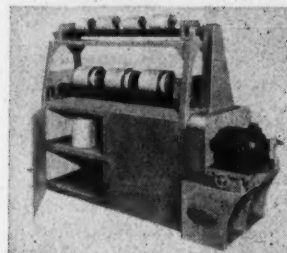
THE FRANK G. HOUGH CO.
MATERIAL HANDLING EQUIPMENT SINCE 1920
626 Sunnyside Ave. • LIBERTYVILLE, ILL.

When inquiring specify CP 3380 — see handy form pages 2-3

Easiest Simplest Way to Grind Small Batches



WITH **ABBÉ**
**JAR ROLLING
MACHINES**



- Multiple Jars of Material—Wet or Dry—Processed Simultaneously
 - Just Place Jars on Rollers—No Clamping or Fastening
 - Handle All Size Jars or Bottles in One Operation
 - To Remove Simply Lift Off Any Jar
- Write for
Catalog 63

Made with rubber-covered steel rollers of any desired length to handle single or parallel rows of jars, and in double or triple tiers for as many jars as are desired from 1 qt. to 6.6 gal. each. Built-in cabinet optional.

ABBÉ ENGINEERING CO.
46 CHURCH STREET • NEW YORK 7, N. Y.

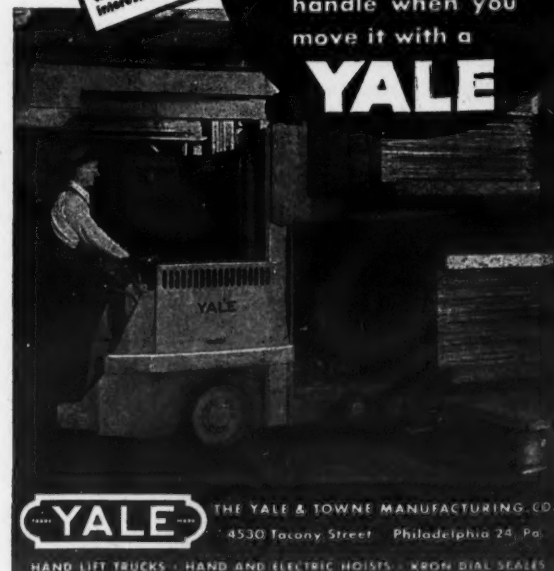
When inquiring specify CP 3381 — see handy form pages 2-3

HEAVY LOADS..

are a cinch to
handle when you
move it with a

YALE

THERE'S A YALE
ELECTRIC TRUCK
TO FIT YOUR NEEDS
Send for catalog
today, specifying
type of truck in
which you are
interested.



YALE THE YALE & TOWNE MANUFACTURING CO.
4530 Tacony Street Philadelphia 24, Pa.
HAND LIFT TRUCKS • HAND AND ELECTRIC HOISTS • KROM DIAL SEALS

When inquiring specify CP 3382 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

THESE BETTER CUTTERS INCREASE STRAPPING OUTPUT!

The better the tools, the greater the efficiency of your shipping and receiving rooms! That's why it pays to use Signode strapping cutters. Order from the models described here!

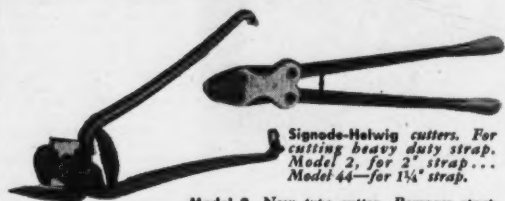


Model 1. All-purpose cutter for strap from $\frac{1}{4}$ " to and including $\frac{1}{2}$ ". Light, easy to handle.

Model 7. New type. Cuts large, heavy gauge strap easily, safely. For all strap up to and including $2 \times .035$ ".



Model 5. Receiving and shipping room model. Cuts all strap from $\frac{1}{4}$ " to and including $1 \frac{1}{2}$ ".



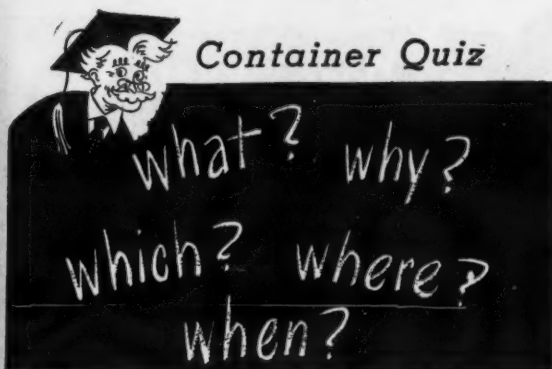
Signode-Helwig cutters. For cutting heavy duty strap. Model 2, for 2" strap... Model 44—for $1 \frac{1}{4}$ " strap.

Model 2. New type cutter. Removes strap quickly from boxes, cartons, crates, etc. For strap up to and including $\frac{1}{4}$ " x .035".

Signode
Reg. U. S.
Pat. Off.

SIGNODE STEEL STRAPPING COMPANY
2658 N. WESTERN AVENUE
CHICAGO 47, ILLINOIS

When inquiring specify CP 3383 — see handy form pages 2-3



• The answers to these 5 questions are of vital interest to all those concerned with the better packing of their products.

"**WHAT** container will provide better protection, will best ship our products?" We think that General Boxes will provide better and more economical protection for your products.

"**WHY?**" Because they're designed specifically to the product, as a "Part of the Product."

"**WHICH** type of container will do the most efficient job?" The answer to this important question is provided by our Engineering Service.

"**WHERE** is this service available?" For complete information just write our nearest office.

"**WHEN?**" ... is best answered by your doing this right now.

ENGINEERED SHIPPING CONTAINERS

GENERAL BOX COMPANY

GENERAL OFFICES: 525 N. Dearborn St., Chicago 10, Illinois.
DISTRICT OFFICES AND PLANTS: Brooklyn, Cincinnati, Detroit,
East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans,
Shobogen, Natchez, Winchendon.
Continental Box Company, Inc., Houston, Dallas.

25 years experience in designing better containers for all industry.

When inquiring specify CP 3384 — see handy form pages 2-3

DECEMBER, 1947

Material Handling

apparatus, maintenance tools, pressure greasing or other service facilities.

FEATURES — Turns in its own length. Ample deck space. Comfortable and easy-riding. Handles without physical fatigue.

DESCRIPTION — Full high and low speed in forward or reverse. Powered by Briggs & Stratton 2- $\frac{1}{4}$ hp gasoline engine. Platform is 3 x 5- $\frac{1}{2}$ '. Overall length, 108"; wheelbase, 72"; ground clearance, 5- $\frac{1}{2}$ "; loading height, 16"; tires, four 6-ply pneumatic industrial, size 14 x 4- $\frac{1}{2}$ ".

TRUCK-MAN, Inc., Dept. CP, Dept. K, 1423 W. Ganson St., Jackson, Mich.

When inquiring specify CP 3385 — see handy form pages 2-3

Mobile Hydraulic Elevating Tables Move Loads Up to 2000 lbs.

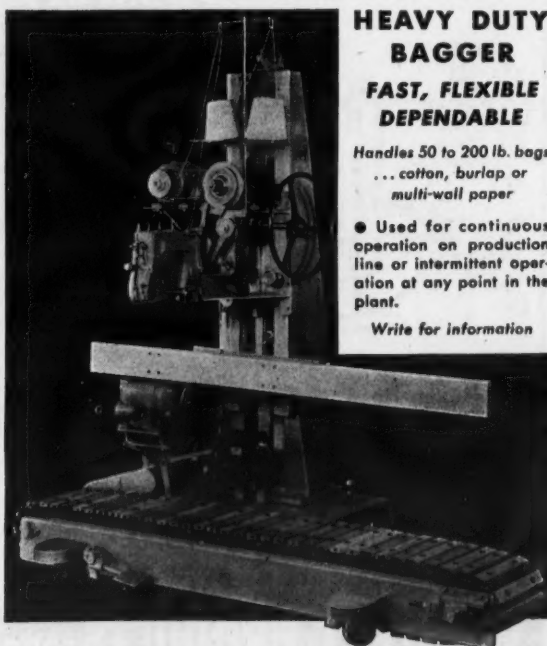
An 8-page bulletin describes portable hydraulic elevating tables. Photographs show various models in actual use for die handling, strip and sheet feeding, work positioning, truck loading and other jobs. Both standard and telescopic types are included.

Features are pointed out on a full-page drawing. These include two swivel and two rigid 5" diameter casters, tubular trusses, convenient table lock, ample leg room. For capacity loads of 2000 lbs. Optional accessories are shown and described, also special models. Bulletin 231.

LYON-Raymond CORPORATION, Dept. CP, 3924 Madison St., Greene, N. Y.

When inquiring specify CP 3386 — see handy form pages 2-3

The CONSOLIDATED Model 105



**HEAVY DUTY
BAGGER**

**FAST, FLEXIBLE
DEPENDABLE**

Handles 50 to 200 lb. bags
... cotton, burlap or
multi-wall paper

• Used for continuous
operation on production
line or intermittent operation
at any point in the
plant.

Write for information

CONSOLIDATED PACKAGING MACHINERY CORP.
BUFFALO 15, N. Y.

When inquiring specify CP 3387 — see handy form pages 2-3

**LOWEST COST
LIFT TRUCK.**
... you can buy!

**Exclusive
STUEBING CREATIONS
Famous Lift Trucks
Since 1910**

**users say
maintenance
cost is NIL!**

Since Walter C. Stuebing pioneered Lift Trucks in 1910, he has sold hundreds of thousands of trucks to America's greatest industries. Wise buyers are enthusiastic about the low initial cost of Red Arrow and Hydromatic hand Lift Trucks. Of course, these trucks have exclusive Stuebing features — speed, economy, and unusual ease of operation — AND DOWN TIME IS NIL! Many trucks still in use after 35 years.

Machine bolted frames and machined standardized parts simplify occasional repairs. Buy one and you'll buy only Red Arrow or Hydromatic Trucks. Write Dept. H for prices and literature.

**Get the Load
out of your Plants**

**... with LIFT TRUCKS
by W. C. STUEBING!**

Copyright Lift Trucks, Inc.



LIFT TRUCKS, INC.

Walter Stuebing, President

2425 Spring Grove Ave. Cincinnati 14, Ohio

When inquiring specify CP 3388 — see handy form pages 2-3



2 MEN load 9 TONS per hour

THE PROBLEM—At the Ford Motor Co. cartons of pistons, weighing 50 pounds each, are stored in a large warehouse that has no loading dock. These cartons must be moved as much as 200 feet and then lifted into a truck by operators of the Baker Cartage Co. of Detroit.

SOLVED BY RAPIDS-STANDARD—Rapids-Standard engineers suggested Rapid-Wheel Gravity Conveyors for carrying the cartons through the warehouse and a Rapid Power Booster for lifting them into the truck. The installation has been an outstanding success. Two men, one feeding the conveyor and one stacking inside the truck, handle an 800 carton load weighing 21 tons in 2½ hours. The complete operation can be handled by the driver and his helper. The same set-up is used for unloading trucks... the direction of the Power Booster and the slope of the gravity conveyor are simply reversed.

OFFICES IN PRINCIPAL CITIES

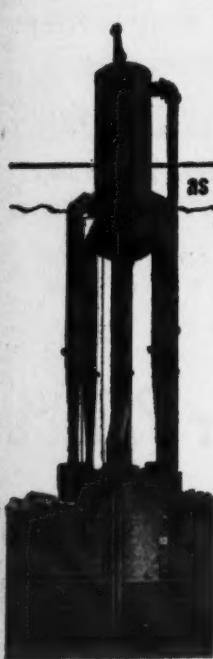


Manufacturers of
STEEL FORGED CASTERS • TRUCKS • CONVEYORS • POWER BOOSTERS

Rapids-Standard Co., Inc.

Sales Div.—360 Peoples Nat'l Bk. Bldg., Grand Rapids 2, Mich.

When inquiring specify CP 3389 — see handy form pages 2-3



as simple as the old Desert Water Bag.

WATER-VAPOR Refrigeration for Industrial Uses

Water is the only refrigerating medium. It is cooled by direct evaporation in a high vacuum created by steam-jet booster ejectors. As in the desert water bag of prairie schooner days, a small portion of the water is evaporated, giving sufficient cooling effect to chill the remainder. Inherently simple, safe, quiet, clean.

Ingersoll-Rand builds steam-jet coolers in sizes from 20 to 1200 tons of refrigeration. They are suitable for chilled water temperatures down to 40°F, and can be built to operate with steam at any pressure down to 2 pounds per square inch gauge.

The self-supporting feature of I-R Water-Vapor refrigeration units eliminates the need for supporting steel framework.

Ingersoll-Rand

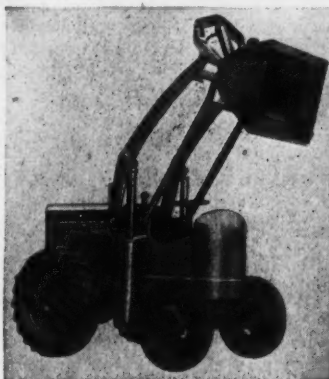
15-13 11 Broadway, New York 4, N. Y.

When inquiring specify CP 3390 — see handy form pages 2-3

Material Handling

Handle Salt, Bulk Materials with 3/4-Yard Payloader

Has 4-speed, fully reversible transmission; bucket dumps all or gradually, any height



USES — Medium-size payloader for handling salt and other bulk materials.

FEATURES — Thoroughly job-tested. Provides practical forward digging speeds plus fast reverse maneuvering. Minimum shifting. Bucket may be dumped completely or gradually at any height. Full visibility. Combines production with economy.

DESCRIPTION — ¾-yard shovel 4-speed, fully reversible transmission. A single lever shifts gears into desired speed range, after which operator controls, forward or reverse merely by flipping directional lever. Model HF. Bucket is raised, lowered, dumped and relatched by hydraulic power, controlled by single lever. Full bucket capacity assured and spillage of loose materials prevented



Carboy Drainer Available in 5 to 15 Gal. Sizes
1. Outside Diameter (1¼" to 2¼")
2. Outside Diameter (2¼" to 3")
3. Outside Diameter (3¼" to 3½")
Specify Size When Ordering

- Features:**
- Made of hard, acid-proof rubber.
 - Soft rubber cuff permits drainer to be attached to carboys.
 - All parts are replaceable.
 - Prevents accidents caused by splashing and carelessness.
 - Uninterrupted flow.
 - Air vent eliminates pumping or syphoning.

Send for Literature, Dept. CP

WAHLERT PRODUCTS CORP
INDUSTRIAL SAFETY AND FIRE EQUIPMENT
27 LAFAYETTE ST., BROOKLYN, N. Y.

When inquiring specify CP 3391 — see handy form pages 2-3

BAKER TRUCK delivers 35 hours' work in 3!

At the Erie, Pa. plant of a large paper manufacturer it formerly took seven men 5 hours to unload, weigh and store a box-car load of pulp. Today a Baker Truck with one operator can do the job in 3 hours.

• This plant has 24 electric trucks and more on order. Annual production is over 100,000,000 lbs. of paper, comprising almost 3,000 different kinds, sizes and colors. Trucks are used for unloading and storing incoming materials, transporting in process, warehousing finished products, and loading shipments into box-cars. "In all cases" the company states, "sizeable savings were made, not only in handling cost, but also the job was made many times easier."

Material Handling at this plant is controlled by a central department, which integrates all operations, using equipment to the best advantage. Where possible, materials are handled on pallets or skids. Plans are under way to have all suppliers ship materials on pallets—incoming shipments not now on pallets are palletized on arrival. A new warehouse was designed around mechanized unit-load handling with electric trucks and tractor-trailers. The results are a maximum use of warehouse space, a minimum of handling time and cost—better, faster service for the company's customers. Write for information.

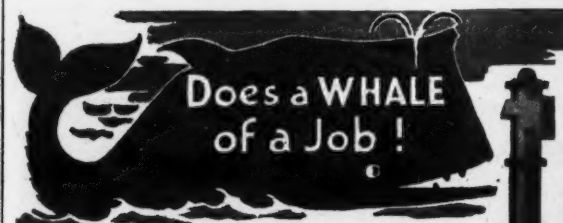


Baker Fork Truck picking up unit load of lap pulp for loading into box-car.

BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Rauland Co.
2163 WEST 25th STREET • CLEVELAND, OHIO

Baker INDUSTRIAL TRUCKS

When inquiring specify CP 3392 — see handy form pages 2-3



Does a WHALE of a Job!

Having trouble elevating your bulk material? Install the HAMMOND Screw-Lift and your worries are over!

Here is the modern, efficient way to elevate free-flowing bulk materials — Barley — Bone — Borex — Corn — Flour — Lime — Rice — Soybeans — Sugar — Wheat — etc. It revolutionizes material handling!

"HAMMOND" Screw-Lift

Standard units for capacities of 75, 300, 1000 or 2500 cu. ft. per hour are available with drives to suit conditions. Lifts to over 100 feet. Installation requires little space. Operates without noise under load or empty. Dust-tight. Easy to install. Low in maintenance cost.

HAMMOND patented construction avoids choking. This feature and others exclusive with Screw-Lift, contribute to trouble-free elevating. Write for Form No. M-500-2.

Type "C".
5 other types available.

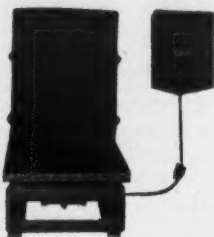
Screw Conveyor Corporation
500 HOLMAN ST. HAMMOND, IND.
ENGINEERS
TRADE MARK REG. U.S. PAT. OFFICE

When inquiring specify CP 3393 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

SYNTRON

PACKERS



Electric Vibratory



Hydraulic Jolters

Increase Packing Efficiency

— by eliminating slow, laborious hand pounding, bumping and jarring.

— save money and time by speeding up your container-filling program.

3600 rheostat-controlled vibrations per minute from the electric models — 100 short, sharp jolts per minute from the hydraulic models.

Write for catalog data.

SYNTRON CO., 110 Lexington, Homer City, Pa.

When inquiring specify CP 3394 — see handy form pages 2-3

Material Handling

by automatic bucket tip-back. Wheels are large, equipped with hydraulic brakes, and easy-rolling. Automotive-type steering.

Bulldozer blade, crane hook, cab and snow bucket available. Descriptive Bulletin 166.

THE FRANK G. HOUGH COMPANY, Dept. CP, Libertyville, Ill.

When inquiring specify CP 3396 — see handy form pages 2-3

★

Scientific Materials Handling Explained in 9 x 11" Work Manual

Co-ordination of all steps in materials handling is the subject of a 9 x 11" booklet and work manual. Many pages of illustrations cover scientifically engineered handling methods. Topics include the concentration of materials within easy reach of operators, vertical and horizontal expansion, practical stacking and storing, elimination of waste motion in handling.

Literature also covers use of movable transports, bin sections, shelf racks, pallets, trays, etc. Systematic movement of products through the plant, and a series of interlocking units of high flexibility are explained. Description tells how this method has saved up to 50% in labor cost, floor space and equipment cost. Specially designed systems are also illustrated. "Turner System of Materials Handling."

FACTORY SERVICE COMPANY, Dept. CP, 4615 N. Twenty-First St., Milwaukee 9, Wis.

When inquiring specify CP 3397 — see handy form pages 2-3



Avoid
costly
shutdowns

due to corrosion

Specify HAVEG Equipment for

HAVEG is a molded structural material that is completely acid and alkali resistant throughout its entire mass... it is not a lining nor a coating!

Large size equipment can be molded at low cost in one piece without seams or joints and installation accomplished easily and economically.

Send for Bulletin F-5 for complete design, engineering and application data.

**CORROSION
RESISTANCE
THAT'S
MORE THAN
SKIN DEEP**

- Agitators
- Baskets
- Blowers
- Fume Duct
- Filters
- Kettles
- Piping
- Pumps
- Tanks
- Towers
- Many Others

HA-6-47



When inquiring specify CP 3398 — see handy form pages 2-3



MOST POWERFUL ALNICO MAGNETIC PULLEY

the PERMA-PULLEY ...built by Dings

No matter what your requirements, Dings now offers the most powerful magnetic pulleys for removal of iron from materials carried on belt conveyors:

1. For burden depths up to 2" — The Dings PERMA-PULLEY.
2. For burden depths over 2" — The Dings "High Intensity" Electromagnetic Pulley.

Dings PERMA-PULLEYS are available in a complete range of 53 sizes. Send for NEW BULLETIN giving complete details.

DINGS MAGNETIC SEPARATOR CO.
4731 W. McGeagh Ave., Milwaukee 14, Wis.

Dings
"HIGH INTENSITY"

- Most powerful non-electric pulley on the market for burden depths up to 2"
- No wiring — no electrical accessories.
- Magnetic permanence GUARANTEED FOREVER!
- Simple to install.
- No operating cost.
- No maintenance.
- Extra high strength Alnico magnets used.

THE ANSWER...

to many bag-closing
requirements



When inquiring specify CP 3399 ... see information request blank, pgs. 2-3



THE low cost, economical Union Special Suspended Head Bag Closing Machine offers many plants an excellent solution for handling varying volumes of work. Check these features... Easily installed anywhere in your plant... Employs a space-saving pulley suspension system... Equipped with a built-in motor, thumb controlled clutch, and automatic brake—1 man can do the work of 5 hand sewers... Adaptable to a wide variety of uses on fabric or paper bags... Class 14500 sewing head for light and medium work or Class 80600 head for heavy duty.

For additional information, write

UNION SPECIAL MACHINE COMPANY

442 N. Franklin St. • Chicago 10, Illinois

Bag Closing Machines

When inquiring specify CP 3395 — see handy form pages 2-3

DECEMBER, 1947

Page 29

SEE THIS IMPROVED
*Free-Draining
Bonnet*
IRON CLAMP GATE VALVE

1

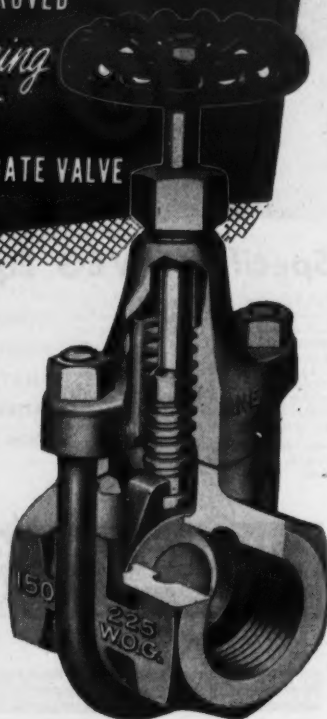
Bonnet drains fully. No flats or pockets to trap fluids. No freezing in bonnet.

2

Wiping action of interrupted bonnet threads keeps stem screw clean. Protects threads; prevents sticking in heavy fluid service.

3

More compact bonnet and stem design reduces clearance requirements.



Cat. No. 488

WHERE TO USE: This improved free-draining bonnet means a better clamp gate valve for handling caustics, alkalies, corrosive chemicals—for fuel, lubricating, and other heavy oils—for tarry and similar fluids. Also for lines subject to freezing. Crane clamp gate valves are easy to service and stay tight. They're Crane quality throughout—yet moderately priced.

AVAILABLE IMMEDIATELY in all iron, with screwed ends, in sizes from $\frac{1}{4}$ to 4 in. Working pressures: Up to 150 pounds steam; 225 pounds water, oil, or gas, depending on size.

ASK FOR DESCRIPTIVE BULLETIN AD-1667

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

EVERYTHING FROM . . .

CRANE

FOR EVERY PIPING SYSTEM

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

When inquiring specify CP 3400 — see handy form pages 2-3

Briefs . . . from contemporary publications

Here's a quick look at interesting articles appearing in other publications
. . . as selected by Technical Editor, H. McCormack

Sorbitol Production

A description of the catalytic hydrogenation process for sorbitol as developed and operated by the Atlas Powder Co. is discussed in this 3 page editorial article.

Raw material employed is d-glucose and hydrogen. The d-glucose is a purchased material. Process for making hydrogen is described.

Properties of Sorbitol are pointed out with present and prospective uses. Illustrated with 6 photos. (From "Chemical Industries", October, 1947)

Reactions of Steam and Carbon Dioxide with Carbon

Kinetics of the chemical reactions between carbon and oxygen, carbon and water vapor and carbon with carbon dioxide as the precursors of the fluidized powder technique of coal gasification are described in this 4 page article. Coal-air ratios are stated for various temperatures with a certain amount of powdered coal in suspension. Reasons for an almost stable temperature are indicated.

Conditions for successful operation of the fluidizing process are shown. Kinetics of the carbon reactions are dis-

cussed as presented by prior investigators as they applied to the conditions presented in the article. Industrial advantages are emphasized. (From "Chemical & Engineering News", September 29, 1947)

Amine Antioxidants

This $3\frac{1}{2}$ page article tabulates the common commercial antioxidants by trade name and chemical composition. Color reactions by which the material can be identified are presented and discussed. Necessary reagents, sampling technique and analytical procedure are pointed out. (From "Analytical Chemistry", October, 1947)

Coal Fluidization

One of the experimental developers of the coal fluidization process describes how it operates. A diagram shows the necessary equipment and its arrangement. Amount and type of products obtained from a given type of coal are stated.

Operating results in a fluid char maker using raw coal are

Hotpack

DRYING OVENS

MECHANICALLY
CONVECTED

SCIENTIFICALLY BUILT FOR ACCURACY AND DEPENDABILITY

Hotpack Features Assure You The Best In Drying Equipment



- Quick come-up time and speedy temperature recovery permit large volume of work.
- Built-in Triplex heat-resisting glass window permits continuous observation without disturbing environment of working chamber.
- Accurate mercury thermometer built into cabinet front for convenient eye-level reading.
- All internal exposed surfaces including solid shelves are stainless steel.
- Floor space reduced to minimum—all mechanical, and electrical equipment located under chamber floor instead of on side.

Prompt shipment thru your Laboratory Supply Dealer or write for Catalog No. 28. Several Distributor Territories Open.



FOR OPERATION 35° C.—180° C.
TEMPERATURE DIFFERENTIAL 1° C.

Model No.	Interior Size			Exterior Size			Current Characteristics
	W.	D.	H.	W.	D.	H.	
1202	16"	16"	19"	31"	25"	60"	2300 Watts
1204	24"	20"	30"	39"	29"	60"	3000 Watts
1206	36"	24"	36"	51"	33"	68"	3800 Watts

FOR OPERATION 90° C.—260° C.
TEMPERATURE DIFFERENTIAL 2° C.

Model No.	Interior Size			Exterior Size			Current Characteristics
	W.	D.	H.	W.	D.	H.	
1201	16"	16"	19"	31"	25"	60"	3000 Watts
1203	24"	20"	30"	39"	29"	60"	3800 Watts
1205	36"	24"	36"	51"	33"	68"	4600 Watts

THE ELECTRIC *Hotpack* COMPANY, INC.
COTTMAN AVE. AT MELROSE ST. PHILADELPHIA 35, PENNSYLVANIA

When inquiring specify CP 3401 . . . see information request blank, pgs. 2-3

summarized and tabulated for 4 different operating temperatures. Similar operating figures are included when operating with oxidized coal. This 3 page article is illustrated with 1 diagram and 3 tables. (From "Power Plant Engineering", October, 1947)

Vulcanized Rubber

A discussion of the aging and preservation of vulcanized rubber is presented in a 2 page article.

Author points out that artificial aging used in testing does not present a satisfactory picture of what would occur in industrial uses of vulcanized rubber. Two figures illustrate the article. (From "India Rubber World", October, 1947)

Agitator Systems

A 2 page article describes how pilot plant data may be used for scaling up design for agitator systems used to secure mass and heat transfer. Two examples are cited and developed. (From "Chemical Engineering", October, 1947)

Centrifugal Pump Troubles

Eight procedures to be used in locating the failure of a centrifugal pump in order to make it function satisfactorily are indicated in this 3 page article.

One diagram, a photograph, 3 tables and sample calculations are included in the article. (From "Industry and Power", October, 1947)

New Method of Testing Catalysts

Necessary equipment required and the technique employed in studying the productivity of a catalyst to promote a certain reaction are described. A diagram of a complete testing unit is included and experimental results are tabulated. (From "Analytical Chemistry", October, 1947)

Recovery of Dried Solubles from Thin Stillage

Paper describes the processes used in concentrating still waste from grain alcohol production. Liquid containing 4-5% solids, which is concentrated to about 6-7% moisture.

Equipment required is pointed out as well as operating details, under given operating conditions. Article consists of 4 pages including 5 figures and a description. (From "Chemical Engineering Progress", October, 1947)

Time and Motion Study in the Chemical Processing Field

A 3 page article cites examples of the benefits to be gained from time and motion study. Four figures illustrate the article in which examples are varied from the arrangement of the control laboratory to stacking casks. (From "Chemical Engineering News", October 27, 1947)

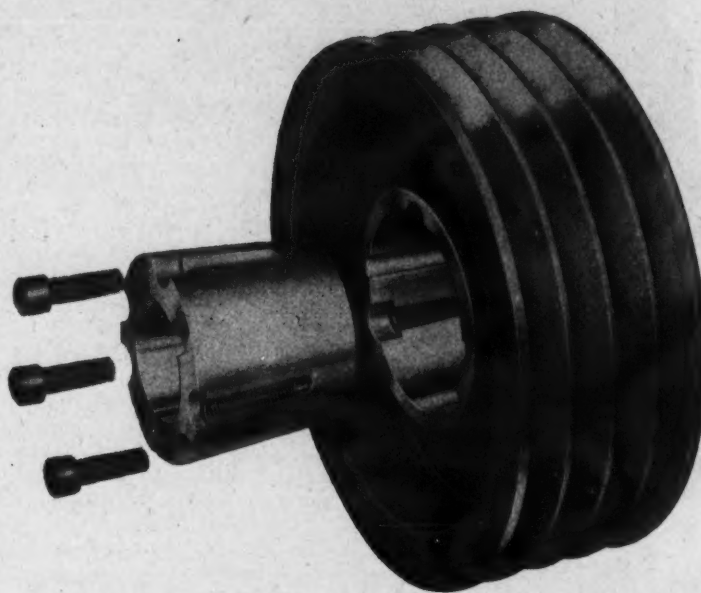
Process Applications of High Vacuum

A definition of terms used and a flow sheet for a typical high vacuum system are presented in this 5 page article.

Discusses gaskets, pumps, process vessels and leak detection. Necessary instruments required and comments on high vacuum applications are included. (From "Chemical Engineering", October, 1947)

DECEMBER, 1947

TAPER-LOCK BRAND



THE NEW TIME-SAVING TAPER BORE SHEAVE

TAPER-LOCK has the simplest, surest mechanism ever devised for holding wheels to shafts...TAPER-LOCK saves time. You slip it on the shaft, line it up and tighten while sighting...TAPER-LOCK runs true. It holds with a firmness equivalent to a shrunk-on fit, yet it disengages with less effort than any other sheave.

TAPER-LOCK sheaves are available in all the most wanted sizes. Thus Dodge has not only created a great new product in the power transmission field, but has made this product adaptable to needs throughout industry.

TAPER-LOCK is a striking example of the new Dodge products which help you put more power on the job—cut costs and increase production. The savings which Dodge equipment make possible will be important to you in the competitive days ahead. Get the full story—now.

DODGE MANUFACTURING CORPORATION
MISHAWAKA • INDIANA

IN ALL THESE STOCK SIZES:

CLASS SHEAVE	PITCH DIAMETER	NUMBER GROOVES	TOTAL SIZES
DUAL DUTY "A"	3.0 to 18.0	1 to 6	150
DUAL DUTY "B"	4.6 to 18.4	1 to 6	114
B	5.4 to 38.0 20.0 to 38.0	7 to 10 2 to 10	76 36
C	9.0 to 44.0	3 to 10	128
D	13.0 to 33.0	4 to 10	77

DODGE

of Mishawaka, Ind.

Copyright, 1947, Dodge Mfg. Corp.

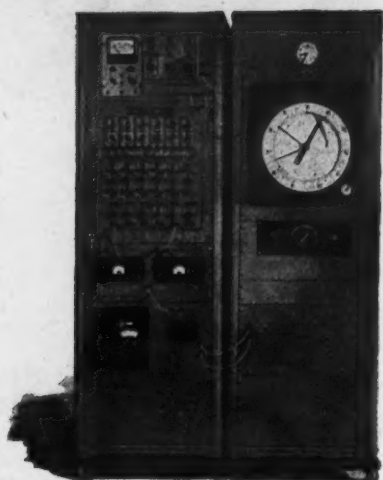
CALL THE TRANSMISSIONEER

He's a factory-trained specialist qualified to analyze your mechanical power transmission needs and recommend correct equipment. Consult him without obligation. Look for his name under "Power Transmission Equipment" in your classified telephone directory.



FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

When inquiring specify CP 3402 ... see information request blank, pgs. 2-3



This is an oil refinery... and a steel plant

Within this marvel of engineering development is also a ceramic plant and every chemical process. It is called an Analog. It is NOT FOR SALE.

The Analog was developed by Brown Instrument Co. engineers in recognition of the true sense of *Engineered Instrumentation*.

Having already revolutionized industrial measurement with the ElectroniK "Continuous Balance" Potentiometer and control performance with the Air-o-Line unit, Brown engineers expanded into basic application research. Through research has come immeasurable "know-how" in instrument design and application — new concepts of control for each industrial process.

The Analog is essentially a pilot plant for instrumentation. It can duplicate by electrical analogy every process in your plant or any other. Each lag, each delay, the characteristics of input, even the characteristics of the control valve are taken into account by electrical analogy.

The Analog aided in the development of many of the advanced features now part of Brown instruments. Now with new avenues opened by ElectroniK Air-o-Line Control, the Analog is being used to develop even better ways to apply these tools to your processes.

The Analog has already had great effect upon instrumentation. You can expect even greater developments in the future.

The Brown Instrument Company,
4421 Wayne Ave., Philadelphia 44, Pa.

**DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR CO.**

SUBSIDIARY COMPANIES IN TORONTO • MEXICO CITY •
LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS

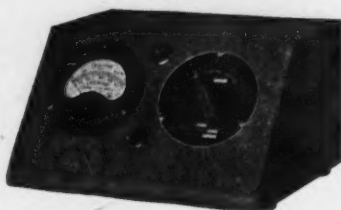
Instruments by **BROWN** *and Controls by*
MINNEAPOLIS-HONEYWELL

When inquiring specify CP 3403 — see handy form pages 2-3

Process Instrumentation

Instrument Combines Stepless Input Controller and Temperature Indicator

*Has combined Fahrenheit and Centigrade scale
calibrated to 2000° F. and 1100° C.*



Combined temperature controller
and indicator

USES — Instrument is made for use with various makes of electric furnaces, ovens, melting pots, heating tanks and other heating devices.

FEATURES — Provides variable control and indication of temperature.

Automatically compensated for changes in line voltage and will maintain a constant watt hour input and even temperature hour after hour, regardless of wide voltage fluctuations. Only 5 to 20 watt hours are required to operate the controller, leaving nearly all of the power to be consumed in useful load.

DESCRIPTION — Complete unit is contained in a welded steel case with gray wrinkle finish. Supplied with a 4-foot color-coded thermocouple of 14 gauge

chromel-alumel wire. Instrument panel houses a toggle switch and neon pilot light.

Eight models of the instrument are available, covering current requirements of 115 and 230 volts, 10 to 35 amperes, 25 and 50/60 cycles AC, and for DC.

THERMO ELECTRIC MANUFACTURING CO., Dept. CP, Dubuque, Iowa.

When inquiring specify CP 3405 — see handy form pages 2-3

Servo System Provides Remote Control and Positioning

*Transmitter, control amplifier and receiver comprise
the complete electronic system*

USES — Electronic system may be used for the control of valves, dampers and other mechanical devices.

FEATURES — Simple installation, plug type connections used where possible. Easy adjustment by means of four protected and readily accessible set screws. System has high accuracy.

DESCRIPTION — Three basic units are employed in the system. 1. A transmitter: from which point any position of a remote receiver can be selected. 2. Control amplifier: which responds to the setting of the transmitter and accordingly controls the supply of power to the receiver. 3. Receiver: which moves a load to the selected position.

CAMBRIDGE



pH METERS line-operated — accurate!

The three models illustrated above incorporate many new and important advantages. All are AC line-operated . . . no battery nuisance. Laboratory and Research models use electron-ray tube for precise null-point indication. Industrial model is a direct-reading instrument, ruggedly built for plant use.

Accuracy: Research .02 pH, Laboratory .05 pH, Industrial .10 pH. Other line-operated Cambridge pH equipment includes single- and multi-point indicators and recorders. Send for bulletin 910-MR.

CAMBRIDGE INSTRUMENT COMPANY, INC.
3706 Grand Central Terminal, New York 17, N. Y.
Pioneer Manufacturers of
PRECISION INSTRUMENTS

When inquiring specify CP 3404 — see handy form pages 2-3

Now . . . Bristol Announces

THE NEW "SERIES 500" RECORDING THERMOMETERS AND GAUGES



COMPLETELY NEW DESIGN

The "Series 500" Instruments operate on the same basic principles that have made Bristol Instruments so successful in over 50 years of service to industry . . . and now the working elements have been completely redesigned for:

• Unsurpassed Accuracy • Ruggedness and Simplicity • Ease of Use • Convenience in Servicing • Ready Convertibility from One Type to Another

Send for Bulletin T835

THE BRISTOL COMPANY
141 Bristol Road, Waterbury 91, Connecticut

When inquiring specify CP 3406 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

Dust proof cast metal cases of the transmitter, amplifier and receiver are built to withstand shocks, vibration, corrosion and other industrial conditions.

Signal lamps and/or audible warning signals are available to indicate position and direction of travel of the controlled equipment. Wiring is located in a drop panel for inspection, and complete amplifier can be removed and replaced without use of tools.

A ten page data booklet, No. 138, describes the equipment.

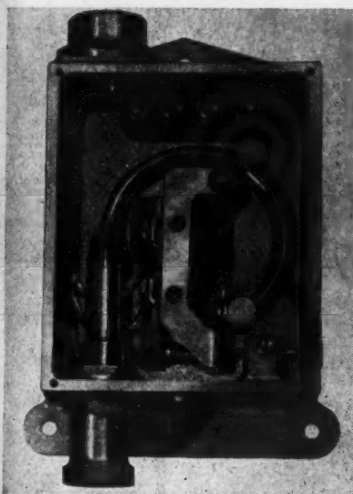
ASKANIA REGULATOR COMPANY, Dept. CP, 240 E. Ontario St., Chicago 11, Ill.

When inquiring specify CP 3407 — see handy form pages 2-3

★

Pressure-Operated Switches Control Processing

Operate on 500-3000 psi maximums; actuate timers, sound warnings, cut off power



Pressure-operated switch

electric pumps or engines simultaneous with alarm. For shutting off fuel supply to boilers when water pressure drops below safe minimum or steam pressure exceeds safe maximum.

Also for hazardous or explosive locations. For evacuated systems and very low pressures.

FEATURES — Convenient adjustment. Explosive-proof design. Pre-set operating characteristics prevent tampering by operator. Versatile and effective.

DESCRIPTION — Model 310 pressure-operated switch. Standard types are for maximum system pressures of 500 to 3000 psi; within adjustable ranges of 15 minimum on decreasing pressure psi and 400 maximum on increasing pressure psi, also 25 to 1200 and 50 to 2500, respectively; and differential pressures of 8 to 275 psi (average). Also modifications of these standards for special pressure switch problems.

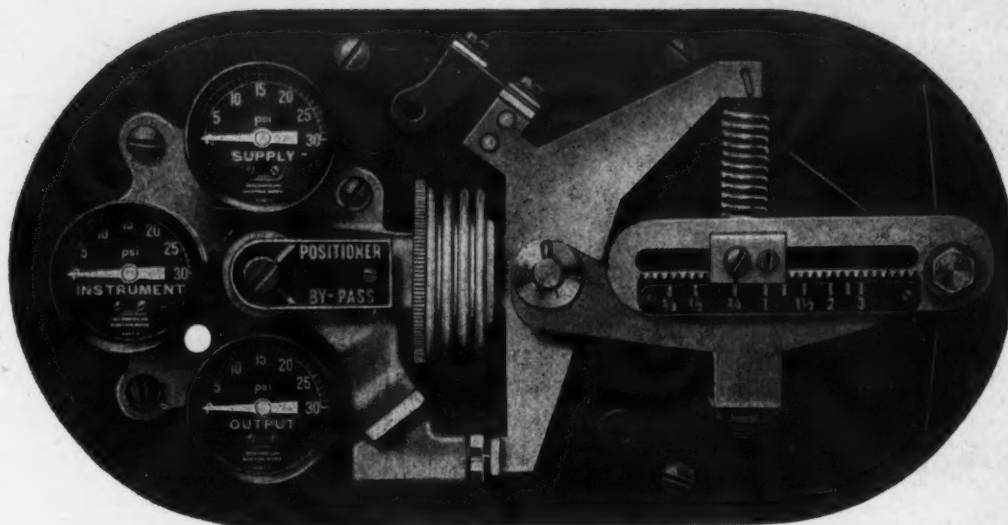
Adjustments may be made with comparable pressure gauge accuracy and dependability by means of Bourdon tube pressure response element. Tubes are alloyed to give high corrosion-resistance. Organic materials are not exposed to actuating fluids.

MELETRON CORPORATION, Dept. CP, 950 N. Highland Ave., Los Angeles 38, Calif.

When inquiring specify CP 3408 — see handy form pages 2-3

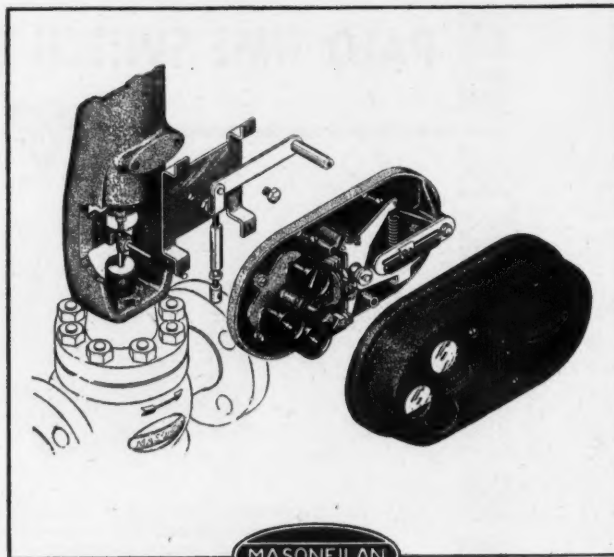
DECEMBER, 1947

NEW! 7400 SERIES



Interior View

CONTROL VALVE POSITIONERS



For use with diaphragm control valves or diaphragm motors — direct or reverse super-structure. For Split Range operation and Motion Transmission.

Positions the valve plug in exact proportion to changes in controller output pressure. Overcomes valve friction, pressure off-balance and viscous fluid effects.



MASON-NEILAN REGULATOR COMPANY

1203 ADAMS STREET, BOSTON 24, MASS.

New York • Buffalo • Chicago • St. Louis • Philadelphia • Houston • Pittsburgh • Cleveland • Tulsa • Atlanta • Los Angeles • San Francisco
Mason Regulator Company of Canada, Ltd., Montreal and Toronto

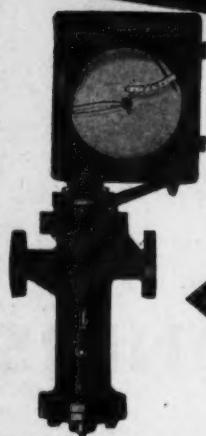
When inquiring specify CP 3409

... see information request blank, pgs. 2-3

Mr. Chemical Engineer:

Have you been over-
looking a good bet
in respect to —

PROCESS STEAM METERING ?



The numerous advantages of the F & P FLOWRATOR meter (formerly called Rotameter) are as valuable for steam measurement as for flow rate measurement of chemicals.

← FLOWRATOR meter with close-coupled secondary indicating-recording instrument. Remote secondary instruments are available.

You will find the steam FLOWRATOR instrument competitive in price from $\frac{1}{4}$ " up through 4" size and you will be able to measure the low night flows or end-of-cycle flows accurately. Right down at 5% on the scale, readings will be just as valid as at high flows—no square root scale distribution. Furthermore, you won't have to look for a straight run of pipe, or worry about straightening vanes or about condensate pots, overload protection, high pressure loss at high flows.

The F & P "Armored" FLOWRATOR instrument is suitable for complete jacketing with insulation, is available for all industrial operating pressures and temperatures. Its precise integrator will give you a reliable steam use totalization under load fluctuations and low end of scale flows which play havoc with orifice meter accuracy.

Send for Catalog 40 for complete details of "Armored" FLOWRATOR instruments.

FISCHER & PORTER CO.
DEPT. 7Z-9E, HATBORO, PENNA.

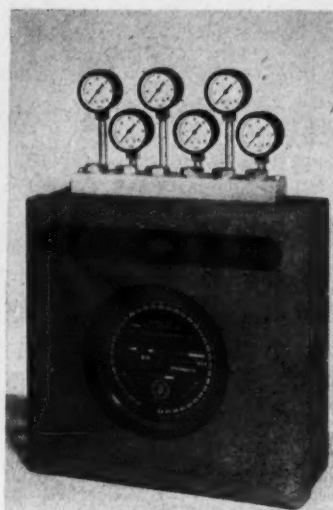
FLOWRATOR
TRADEMARK

When inquiring specify CP 3410 — see handy form pages 2-3

Process Instrumentation

Multiple Operations Controller Programs Processing

Starts, stops, correlates multiple operations which can be actuated by air pressure or electricity



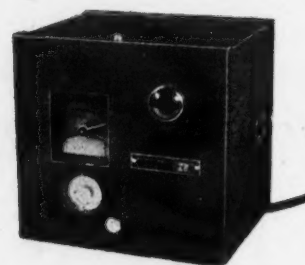
Multiple operations controller does not require the intermediary of solenoid valves.

USES — This controller was originally developed to control plastic and rubber molding equipment. Also useful in other chemical processing applications where timing, correlation, starting and stopping of multiple operations is desired.

FEATURES — It provides flexibility of scheduling which can be varied at will, without the use of tools and without changing parts. Air control is integral and

PALO TIME SWITCH Sr.

Model
2475



The PALO TIME SWITCH Sr. is a completely self-contained unit incorporating the necessary equipment to turn on or off any type of electrical laboratory apparatus on a predetermined time schedule.

110 Volts, AC only

20 AMPS non-inductive or 1 HP motor load

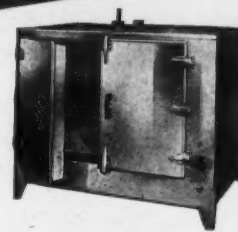
New Complete Catalog now ready! Write for your copy.

PRICE **\$37.50**

PAIO-MYERS INC.
81 READE STREET NEW YORK 7, N.Y.

When inquiring specify CP 3411 — see handy form pages 2-3

"PRECISION" - FREAS GRAVITY CONVECTION OVENS



Double door model. Working chamber 37" x 19" x 25".

Designed for dependable, heavy-duty, constant temperature performance, "Precision"-Freas Gravity Convection Ovens are finding ever-increasing use in the modern laboratory. For baking, evaporating, sterilizing, moisture tests, heat-treating, annealing and conditioning, etc., these ovens offer a degree of temperature accuracy and uniformity unequalled by any comparable equipment.

"Precision"-Freas ovens feature positive automatic temperature control by means of an exclusive hydraulic thermostat, backed by a 5-year Guarantee.

Ovens are of all-metal, double-walled construction, with simplified electrical control. Interiors are built of corrosion-resistant 18-8 stainless steel, exterior in your choice of stainless steel or rust-resistant iron. Write for detailed catalog No. 330-D.

Standard Gravity Convection Cabinets

CABINET SIZE	OVERALL SIZE	Temperature Range	Watts	Heat
Width Depth Height	Width Depth Height			
13" x 14" x 13"	25" x 22" x 28"	35-180° C	600	100
Single Door		35-260° C	1200	104
25" x 19" x 19"	37" x 27" x 34"	35-180° C	1200	128
Single Door		35-260° C	2400	128
19" x 14" x 19"	31" x 22" x 34"	35-180° C	800	130
Single Door		35-260° C	1600	134
37" x 19" x 25"	49" x 27" x 40"	35-180° C	1800	140
Double Door		35-260° C	3600	144

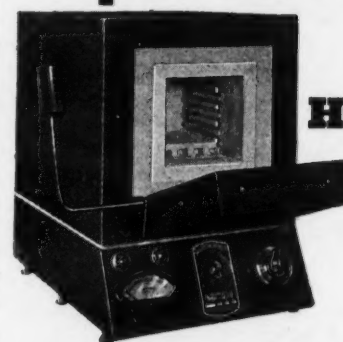
See Your Laboratory Supply Dealer

Precision Scientific Company

Scientific Research and Production Control Equipment

When inquiring specify CP 3412 — see handy form pages 2-3

Proved **ACCURATE** . . .
Now **AUTOMATIC** Too!



HUPPERT
9A Deluxe
LABORATORY
FURNACE

The highly accurate Huppert Model 9A Deluxe is essentially the famous Huppert 9A Furnace with the addition of sensitive automatic control . . . making it the ideal furnace for practically any small batch or unit production. It automatically maintains any set temperature from 100° to 1950° F. Operates on 115 volt A.C., with load range from 600 to 2000 watts. Fully enclosed contacts, special alloy elements. All-steel construction, counter-weighted door. Removable porcelain tray. Dependable pyrometer. I.D. 6" x 6" x 6". O.D. 19" x 26" x 23".

Complete
Ready to
Operate

\$182.00

K. H. HUPPERT CO.
6822 Cottage Grove Avenue, Chicago 37, Ill.

When inquiring specify CP 3413 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

Process Instrumentation

Pilot valve action is equally rapid in the longest schedules as well as the shortest.

DESCRIPTION — The time selector wheel carries 150 keys. These are selected to provide timing, to within .67 of 1% of the overall time range of the instrument, for each successive event scheduled in the operation selector. Standard cycles available to 750 minutes.

The operation selector cam shaft with 10 working positions operates pilot valves or precision switches in any desired sequence according to the operations selector keys which are pre-set. It is triggered by the impulses from the time selector wheel.

Time and sequence sections are driven by gear-head motors. Re-setting is automatic at completion of the program, requiring one second per unused operation.

SEELY INSTRUMENT CO., INC., Dept. CP, 377 Fourth St., Niagara Falls, N. Y.

When inquiring specify CP 3414 — see handy form pages 2-3

★

Illuminated Meters Are Clear Plastic, In 3 Models

Light bulb, mounted remote from case, will not heat instrument

USES — Rear-illuminated, clear plastic meters for various services.

FEATURES — Installed so as to be unaffected by heat of light bulb. Unnecessary to provide hole in back of case, or make special adaptations. Lighting effect is soft, pleasing.

DESCRIPTION — Clear plastic cases are available in three models: Model 352 for AC and 351 for DC are 3-3/4" rectangular; Model 103 is 1" round diameter. Also 2-1/2" and 3-1/2" round and square AC and DC instruments.

Light bulb is mounted outside meter case, sufficiently far away as to have no effect on instrument. Size and type of bulb is determined by amount of light desired and the mounting that is most convenient. Meters are mounted in usual way. An extra hole in mounting panel permits light to reach back of case and enter plastic. Circulars are available.

ASSEMBLY PRODUCTS, Inc., Dept. CP, Chagrin Falls, O.

When inquiring specify CP 3415 — see handy form pages 2-3

★

High Temperature, High Pressure Stainless Alloy Valves Fill Corrosive Services

High temperature stainless alloy valves for chemical, refinery and industrial services are described in a 4-page bulletin. For corrosion resistance and high pressures, they are shown in numerous styles, types and alloys, with specifications noted.

Nine standard alloys are listed, and special valves in various metals are said to be available for corrosive services not requiring ASA and API standards. Catalog 47-AS.

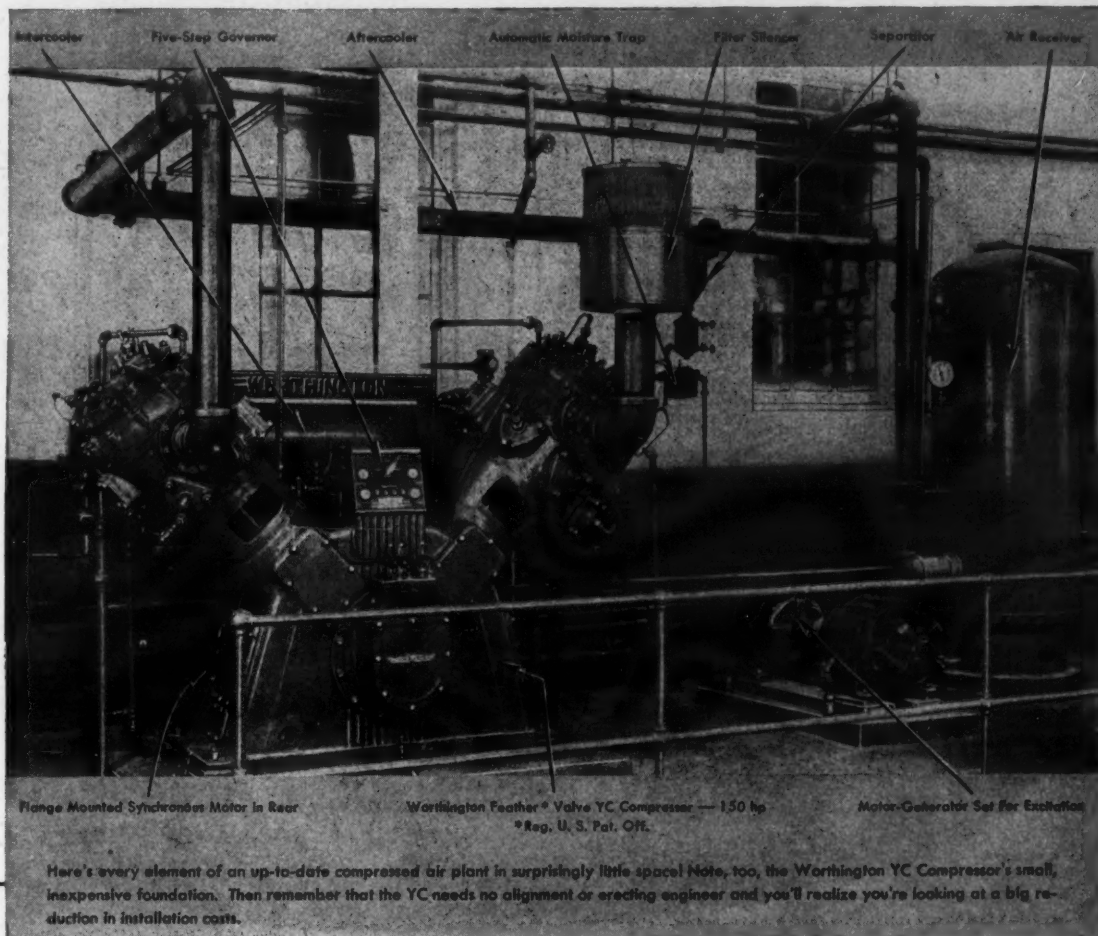
KEROTEST MANUFACTURING COMPANY, Dept. CP, 2525 Liberty Ave., Pittsburgh, Pa.

When inquiring specify CP 3416 — see handy form pages 2-3

DECEMBER, 1947

WORTHINGTON ALL THE WAY!

A Modern, Efficient Compressed Air Plant...Engineered Entirely By Worthington



Plus HIDDEN Advantages Like These:

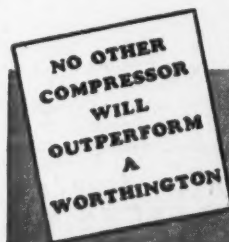
Power factor improvement from the synchronous motor and quick-acting, 5-step governor... completely automatic control for the entire system, as in the largest compressed air plants... advanced YC design that assures a longer-lived, cooler and smoother running compressor, with maintenance and operating expenses at their lowest.

Write for further facts that prove

there's more worth in Worthington. Bulletin L-667-B1A tells the complete story of how YC Compressors can cut your air costs. Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, New York.

K7-18

WORTHINGTON



*Reg. U. S. Pat. Off.



When inquiring specify CP 3417... see information request blank, pgs. 2-3

Announcing

DUAL-TUBE

Something Brand New
in MANOMETERS

MERIAM

• Now, instead of standing on a step ladder—as when reading long range, single column manometers—the operator can read high range pressures, vacuums, and differentials from the floor level.

This new manometer development—the DUAL-TUBE, Meriam Model M-100 — consists of two separate manometer tubes in the same case—each tube with individual well. The left tube has a scale increasing upward; the right tube a scale increasing downward. Both tubes are connected in parallel to the same pressure source. The instrument is ideal as a calibrating standard manometer for checking flow meters, pressure gauges, and other secondary units operating on pressure or vacuum principle. It is direct reading. Since both tubes indicate the same reading, the operator can choose the one most convenient.

It helps avoid accidents, saves time and effort in reading. Of simple, rugged construction, it is built in accordance with Meriam standards of accuracy and sensitivity for long, reliable service. Ask for Catalog Sheet M-100WM.

**THE MERIAM
INSTRUMENT COMPANY**
10940 MADISON AVENUE • CLEVELAND 2, OHIO

WESTERN DIVISION:
1418 Wilson Ave., San Marino 9, California
IN CANADA: Peacock Bros., Ltd., Montreal



When inquiring specify CP 3418 — see handy form pages 2-3

Process Instrumentation

Pyrometer Provides High Level of Measurement Accuracy



Veri-Tell pyrometric Indicator

Incorporates latest improvements in magnet alloys, pivots and jewels, permitting high sensitivity and torque

USES — Instrument is especially useful in sensitive processes, laboratory measurement, thermal analysis problems and applications where unusually narrow or negative scale ranges are required.

FEATURES — Fully compensated for all instrument errors. Assembly method employed insures rigid, vi-

Pneumatic Transmitters

FOR MEASURING FLOW AND LEVEL

Operating On The Force-Balance Principle

Republic pneumatic transmitters (force-balance type) permit the centralization of process records without the necessity of running lead lines containing poisonous or explosive products into control rooms. By eliminating long lead lines, the consequent troubles due to vaporization or freezing are also eliminated. The Republic transmitter is located close to the point of measurement and the value transmitted pneumatically to some distant point where it can be either indicated, recorded or controlled.

FLOW

Republic pneumatic transmitters are particularly adaptable to the flow measurement and control of steam, water, gas, air or oil at static pressures up to 600 lb. per sq. in. They are built to operate on differentials as low as 0.9 in. of water and as high as 800 in. of water.

Pneumatic transmitters are also provided for the flow



Typical installation for measuring flow

measurement of viscous or vaporous liquids which will either congeal or vaporize in lead lines exposed to atmospheric temperature.

LEVEL

There are three types of pneumatic transmitters by which liquid level measurement and control, in either open or closed vessels, may be secured.

1. The differential pressure type, in which the level is measured between the liquid level and a known reference level.

2. The buoyancy type, in which the buoyant force exerted by the liquid against a displacer tube is measured.

3. The weigh tube type, in which the weight of the liquid in a tube is measured.

Write For BULLETIN NO. 1000

REPUBLIC FLOW METERS CO.
2245 Diversey Parkway • Chicago 47, Illinois

When inquiring specify CP 3419 — see handy form pages 2-3

ANNOUNCING!



PRINCO "EASY-SETTING" DIAL THERMOMETERS

- 5 Standard Ranges — Fahrenheit or Centigrade
- "Easy-Access" Cases for Quick Setting
- Simplified Dial and Pointer Adjustment
- Rugged, Accurate, Bimetallic Unit

"Easy-Access" cases permit all adjustments to be made from the front, "on the job"!

Two case types: "Quick-Opening," with threaded frame; "Moisture-Proof," with bolted frame.

4" dial, 5 standard ranges, Fahrenheit or equivalent Centigrade, covering —100° to +850° F. or —75° to +450° C.

Stainless Steel stem in 4 standard lengths: 4", 6", 9" and 12". Separable sockets available. Write for illustrated folder.

PRECISION THERMOMETER & INSTRUMENT CO.

INSTRUMENTS **PRINCO** FOR INDUSTRY

1404 Brandywine Street, Philadelphia 30, Pa.

In Canada: PEACOCK BROTHERS Limited

When inquiring specify CP 3420 — see handy form pages 2-3



HAYS VERIFLOW

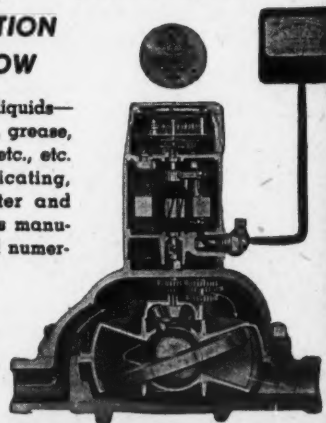
TOTALIZING-INDICATING

METER

Featuring
REMOTE INDICATION
OF RATE OF FLOW

For practically all liquids—tar, molasses, crude oil, grease, paint, varnish, syrups, etc., etc.—for measuring, indicating, totalizing flow of water and chemicals in continuous manufacturing processes and numerous other uses. Its remote indicating feature is new—get the complete story.

SEND FOR
BULLETIN 46-766



The HAYS CORPORATION
COMBUSTION INSTRUMENTS AND CONTROL
MICHIGAN CITY, INDIANA, U.S.A.

When inquiring specify CP 3421 — see handy form pages 2-3

CHEMICAL PROCESSING Preview



MANUFACTURERS OF DEPENDABLE AUTOMATIC CONTROLS FOR A QUARTER OF A CENTURY

MERCOILD

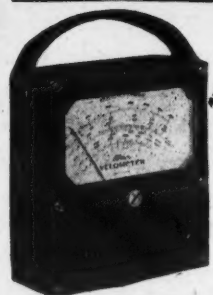
AUTOMATIC CONTROLS FOR HEATING, AIR CONDITIONING, REFRIGERATION AND VARIOUS INDUSTRIAL APPLICATIONS. EQUIPPED EXCLUSIVELY WITH HERMETICALLY SEALED MERCURY SWITCHES ASSURING BETTER CONTROL PERFORMANCE AND LONGER CONTROL LIFE.

THE MERCOILD CORPORATION, 4223 BELMONT AVENUE, CHICAGO, ILLINOIS

When inquiring specify CP 3422 — see handy form pages 2-3



**INSTANT
DIRECT
READING OF
AIR VELOCITIES
ANYWHERE!**



**THE ALNOR
Velometer!**

More inspectors, maintenance men, superintendents and technicians have turned to the Alnor Velometer for checking air flow conditions—in machines, plants, mines, mills, etc. The Velometer is the only instantaneous direct-reading air velocity meter—

accurate in all ranges, from high to low—compact, portable, easy to understand and use. A true precision Alnor instrument, the Velometer is built for hard industrial usage. For your air measurement needs, try a Velometer—you'll be glad you did. Send today: Ask for bulletin 2448-G. Illinois Testing Laboratories, Inc. Rm. 504, 420 N. La Salle St., Chicago 10, Ill.

Alnor

PRECISION INSTRUMENTS
FOR EVERY INDUSTRY

When inquiring specify CP 3423 — see handy form pages 2-3

DECEMBER, 1947

Process Instrumentation

bration proof structure, long life, creep proof calibrations and precise production uniformity.

DESCRIPTION — This is a millivoltmeter pyrometric indicator thermally compensated, and including Briquet (Thermostatic) Automatic Cold Junction correction. Known as Model "I." Model "H" employs the newly developed Hypar compensator which derives its operative energy from a convenient line supply.

Pole pieces, magnets, core assemblies, moving system movement are rigidly aligned and permanently fastened by the company's Kool-weld process.

A full 5" scale, antiparallax mirror and targeted knife edge pointer is standard. Universal flush or surface mount case is standard. These instruments are also available for voltmeter, ammeter, wattmeter and ohmmeter uses.

TACO WEST CORPORATION, Dept. CP, 2620 S. Park Ave., Chicago 16, Ill.

When inquiring specify CP 3424 — see handy form pages 2-3

★

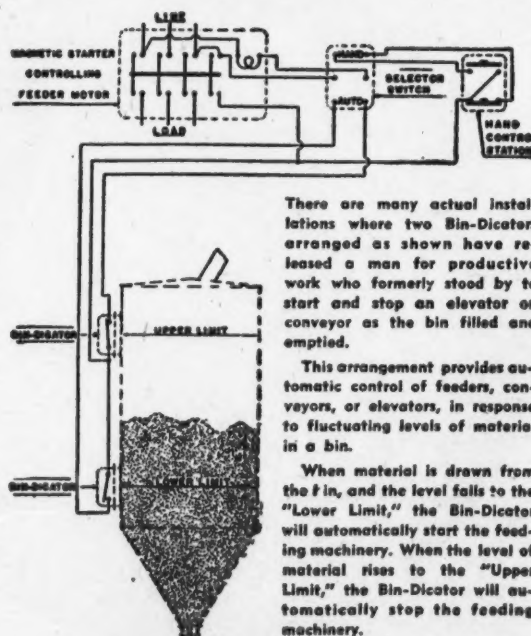
Tabulates Physical, Fabricating Properties of Stainless and Heat-Resisting Steels

Stainless and heat-resisting steels are tabulated and described in a 12-page booklet. Literature includes chemical analyses, physical properties, corrosion-resistance ratings and fabricating properties of standard types of steel. "Jesop Stainless and Heat-Resisting Steels."

JESSOP STEEL COMPANY, Dept. CP, Washington, Penna.

When inquiring specify CP 3425 — see handy form pages 2-3

2 BIN-DICATORS REPLACE 1 MAN



There are many actual installations where two Bin-Dicators arranged as shown have released a man for productive work who formerly stood by to start and stop an elevator or conveyor as the bin filled and emptied.

This arrangement provides automatic control of feeders, conveyors, or elevators, in response to fluctuating levels of material in a bin.

When material is drawn from the bin, and the level falls to the "Lower Limit," the Bin-Dicator will automatically start the feeding machinery. When the level of material rises to the "Upper Limit," the Bin-Dicator will automatically stop the feeding machinery.

THE BIN-DICATOR COMPANY

14616 E. JEFFERSON

DETROIT 15, MICHIGAN

When inquiring specify CP 3426 — see handy form pages 2-3

ASCO SOLENOID VALVES



**Good Automatic Control
of Gas and Liquid Flows**

- 1... Safety Shut-off
- 2... Stop and Start
- 3... 2, 3 or 4-Way Directional
- 4... Pilot Controlled Valves

available either standard or explosion-proof design

There's a lot you can do in the way of automatically controlling the flow of gas or oil with the proper type of solenoid valve. For many applications, the solenoid valve is the best control you can use. It's sure, effective, durable and, of course, automatic.

With an experience in the design and manufacture of solenoid valves dating back to 1910, we have much to offer you in the way of effective automatic control. We'll be glad to study your control problem and make recommendations as to the best valve to use. If necessary, we'll design a special valve as we have done in many cases. Give us complete details when you write.



When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us.

Automatic Switch Co.

379 Lakeside Avenue Orange, New Jersey

When inquiring specify CP 3427 — see handy form pages 2-3

For PROVEN PUMP PERFORMANCE Ask For Eastern

Eastern industrial pumps have proven time and time again that weight, space, power and costs can be materially reduced without impairing trouble-free performance. They are designed for heavy duty applications and yet retain that feature of "remarkable performance for space and weight" which has made the Eastern line of Midget pumps so popular. Eastern has engineered more than 300 models, standard or special. Shown below are three that are representative of the Eastern line.

• Model D-6 and Model F

Both Model D-6 and Model F are single stage centrifugal pumps. Both are of the close coupled type with motor armature and pump impeller mounted on the same shaft. Like many models in the Eastern line, both are available with either adjustable stuffing box or mechanical rotary seal. Standard models of each are available in monel metal, stainless steel, Hastelloy C, cast iron and finished bronze. For quantity applications they are available in other alloys.

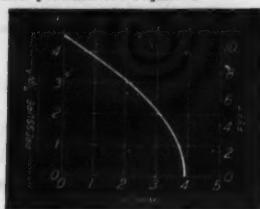
Model D-6 is a compact, lightweight pump designed for continuous duty where small volume and pressure are required.



Model D-6

SPECIFICATIONS

Size: $7\frac{1}{2}$ " x $4\frac{1}{2}$ " x $4\frac{1}{2}$ "
Weight: 11½ lbs.
Power: 1/30 HP



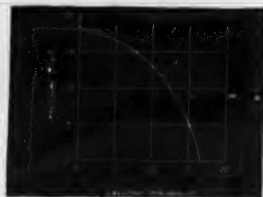
Model F is a heavy duty pump designed for long term operation in applications requiring sizable volumes or pressures.



Model F

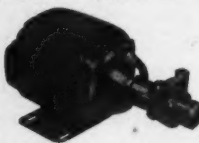
SPECIFICATIONS

Size: $11\frac{1}{2}$ " x $6\frac{1}{2}$ " x $6\frac{1}{2}$ "
Weight: 35 lbs.
Power: 1/3 HP

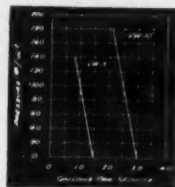


• Models VW-5 and VW-10

These two new models supplement the VW line of positive pressure vane type pumps, designed for handling non-lubricating fluids such as water. Vanes of the same material as the bearings are held in contact with the pump chamber by their special design and radii. This maintains volumetric efficiency without centrifugal force. Pumps are equipped with a mechanical rotary seal.



Model VW-5



SPECIFICATIONS

Model	Motor HP	Weight, lbs.	Length	Width	Height
VW-5A	$\frac{1}{30}$	26	12 $\frac{1}{4}$ "	5 $\frac{1}{2}$ "	5 $\frac{3}{4}$ "
VW-5B	$\frac{1}{30}$	32	14 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
VW-10A	$\frac{1}{30}$	34	15 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
VW-10B	$\frac{1}{30}$	34	15 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
VW-10C	$\frac{1}{30}$	52	17"	7 $\frac{1}{2}$ "	7 $\frac{3}{4}$ "

Additional information concerning these four models may be obtained by writing to Eastern Industries Inc., 296 Elm St., New Haven, Connecticut, for Bulletin 203.

EASTERN INDUSTRIES
Incorporated
NEW HAVEN, CONNECTICUT
Norwalk, Connecticut Newton, Massachusetts

Ideas

Tests May Prompt Standards for Fire-Resistant Upholstery

*Used by du Pont pending adoption of
uniform procedures*

Detailed laboratory procedure for testing the fire-resistant grade of Du Pont "Fabrilite" vinyl plastic coated plastics for upholstery is expected to promote standardization of requirements for upholstery to be used in places of public assembly in the United States.

Pending the adoption of uniform testing procedure, the test adopted as standard is one selected after years of experiments. The test is as follows:

Samples of fire-resistant "Fabrilite," cut in strips one inch by ten inches are mounted vertically so that the center of the lower end of each strip is four inches from the top of a standard laboratory gas burner. The samples are then exposed to a $5\frac{1}{2}$ inch flame, which has a $1\frac{1}{2}$ inch blue cone, for ten seconds. The temperature produced by that flame is several times higher than that necessary to ignite ordinary combustible materials such as cotton, wood, paper, etc. The flame is then withdrawn. To pass the test, the "Fabrilite" samples must show no after-flame after two seconds, nor after-glow after forty seconds.

The "Fabrilite" line of vinyl coated fabrics has been developed by the Du Pont Company in the last few years

as a companion to the "Fabrikoid" pyroxylin-coated fabrics and the "Cavalon" synthetic rubber coated fabrics which it manufactures. The vinyl plastic coating on "Fabrilite" is resistant to oil and greases, has excellent pliability, resistance to cracking at low temperatures, also resistance to flexing and is thoroughly water resistant and washable. Fire-resistant "Fabrilite" has been found particularly satisfactory where high safety standards are needed. (E. I. du Pont de Nemours and Company (Inc), Wilmington, Del.)

Control Viscosity of Enamels Sprayed on Metal Drums

*G. E.-Zahn viscosimeter simplifies tests;
enamels kept at consistency for best drying*

Thinning enamels to the proper consistency for satisfactory spraying is a precise operation, handled in accordance with a set of standards, in the plant of the Cleveland Steel Barrel Co., Cleveland, Ohio.

This is achieved with the aid of a General Electric Zahn viscosimeter. This new use of the instrument indicates its servability in various industries.

Such care in keeping enamels uniform in consistency was prompted by difficulties encountered when the containers came from the drying ovens still sticky because the enamel sprayed on had been too thick to dry properly.

NEW— COMPLETE FLOW DIAGRAMS
ENGINEERING DATA
INSTALLATION GUIDE
FORMULAE
CURVES
TABLES

36 PAGES
30 SECTIONAL DRAWINGS

Steam Jet EJECTORS
for Vacuum Service
and
Vacuum Refrigeration
DIRECT CONTACT
CONDENSERS
Descriptive & New Data
In Types

C. H. Wheeler OF PHILADELPHIA

WRITE FOR IT TODAY

NEW CATALOG

Theory and Operating Characteristics of Steam Jet Ejectors for all classes of vacuum service. Single, Two, Three, Four and Five Stage Types. Non-condensing and Condensing types with Barometric or Surface Inter- and After-condensers for vacuum requirements in chemical plants, food plants, sugar refineries, oil refineries, power plants, etc. Steam Jet Vacuum Refrigeration for water cooling requirements of air conditioning and process applications. . . . This catalog No. 1462 reflects our over 30 years' pioneering experience. Write for it today on your company letterhead.

C. H. WHEELER MFG. CO.
1810 SEDGLEY AVE., PHILA. 32, PA.

Representatives in most principal cities

STEAM CONDENSERS—WATER COOLING TOWERS—STEAM JET EJECTORS



Checking enamel viscosity before spraying drums

On the other hand, the enamel was sometimes too thin and this necessitated respraying in many cases.

The use of the viscosimeter has resulted in the establishment of a set of standard viscosities for various types of enamels, regardless of color.

In addition, the instrument is also used to facilitate determining the correct quantities of thinner and dryer to be added to the enamels in order to obtain a durable and attractive baked finish.

The savings effected are substantial in view of the 5,000 gallons of paint and enamel used monthly for spraying some 200,000 steel containers of from 21.2 gallon to 65 gallon capacity. (General Electric Co., Schenectady, N. Y.)

★

Fuel Saving Questions Answered In Bureau of Mines Bulletin

*Combines all data used successfully in wartime
fuel conservation program*

Hundreds of practical questions on fuel saving practices are now answered in a bulletin recently prepared by the United States Bureau of Mines. This publication combines all the material used successfully in the wartime National Fuel Efficiency Program.

The most effective material distributed during the war-time life of the campaign proved to be an extensive series of question-and-answer "quiz sheets" covering nearly every phase of fuel saving. All of these question-and-answer "quiz sheets" are included in the present Bureau publication Number 466.

When these "quiz sheets" were planned, experts in each field were chosen to prepare questions and answers. The "Quiz sheet" series was divided into seven groups, covering combustion equipment; draft and combustion air; instruments and controls; pumps, traps and valves; cleaning and miscellaneous; heat utilization and distribution and prevention of heat losses. Copies of Bulletin 466 are not sold by the Bureau of Mines but are available from the Superintendent of Documents, U. S. Government Printing Office, Washington, 25, D.C. for 50c.

When it comes to DRYING

**LINK-BELT
Engineers
are at
YOUR
Service**

Link-Belt Engineers offer their specialized advice, based upon broad experience with many drying problems in the food and chemical industries. This advice, which implies no obligation, may result in more satisfactory drying operations for you.

Please give us the information below

1. MATERIAL

- A. To be dried: _____ Cooled: _____ Roasted: _____
 B. Weight per cubic foot, wet _____
 Weight per cubic foot, dry _____
 C. Initial moisture _____ %: Final moisture _____ %
 D. Specific Heat of Material _____
 E. Maximum and minimum sizes of particles _____
 (Screen analysis desirable)
 F. Is material sticky? _____ Abrasive? _____ Corrosive? _____
 G. Temperature of material as fed to cooler or dryer _____
 Desired disch. temp. _____
 H. Maximum temperature to which material may be heated without injury _____

2. CAPACITY

- A. Rate _____ Lbs. per hr. _____ Tons per hour.:
 Check whether feed _____ or Discharge _____
 B. How many hours per day will dryer operate? _____
 Days per week? _____
 C. Is feed uniform? _____ Subject to surges? _____
 Explain _____

3. TYPE OF HEAT

- A. Steam _____ Pressure _____
 B. Oil _____ Pressure _____
 (B.T.U. per gal.) _____ Gravity _____
 C. Gas _____ Pressure _____
 (B.T.U. per cu ft.) _____ Kind _____
 D. Bituminous coal _____ Calorific Value (B.T.U. per lb.) _____

NAME _____

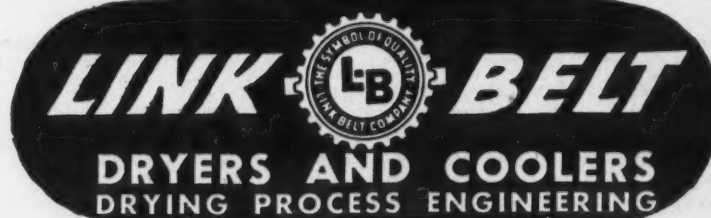
ADDRESS _____

MAY WE SEND

YOU LINK-BELT DRYER BOOKS Nos. 1911-A & 2209?

LINK-BELT COMPANY

Chicago 9, Indianapolis 6,
 Philadelphia 40, Atlanta, Dallas 1,
 Minneapolis 5, San Francisco 24,
 Los Angeles 33, Seattle 4, Toronto 8.
 Offices in Principal Cities.



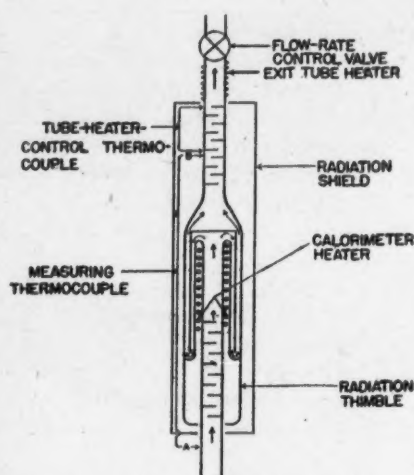
—When inquiring specify CP 3430 . . . see information request blank, pgs. 2-3—

Calorimeter Design Eliminates Heat Leaks; Improves Accuracy

Probable error of specific heats obtained with new apparatus is 0.07 per cent

The accompanying schematic diagram shows detail of the new flow calorimeter developed at the National Bureau of Standards for precision measurements of the specific heats of gases. The greater precision of the new instrument is due chiefly to the almost complete elimination of heat leaks by various features of design.

Reduction of the ratio of heat loss or gain to input is one of the chief problems of gas calorimetry. In this new instrument this is accomplished by causing the gas to flow continuously at a uniform rate through an



Calorimeter measures specific heats of gases

insulated chamber in which it is heated electrically. The heat capacity is then calculated from the heat input, the temperature rise of the gas and the rate of flow.

With gas calorimeters of this general type, a correction is usually made for heat leaks. In this new apparatus, leaks are so reduced that correction for them is unnecessary. The number of necessary observations is lessened and results are more trustworthy, since there are errors in calorimetric measurements that increase with increasing flow rate and cannot be removed by extrapolation to infinite flow.

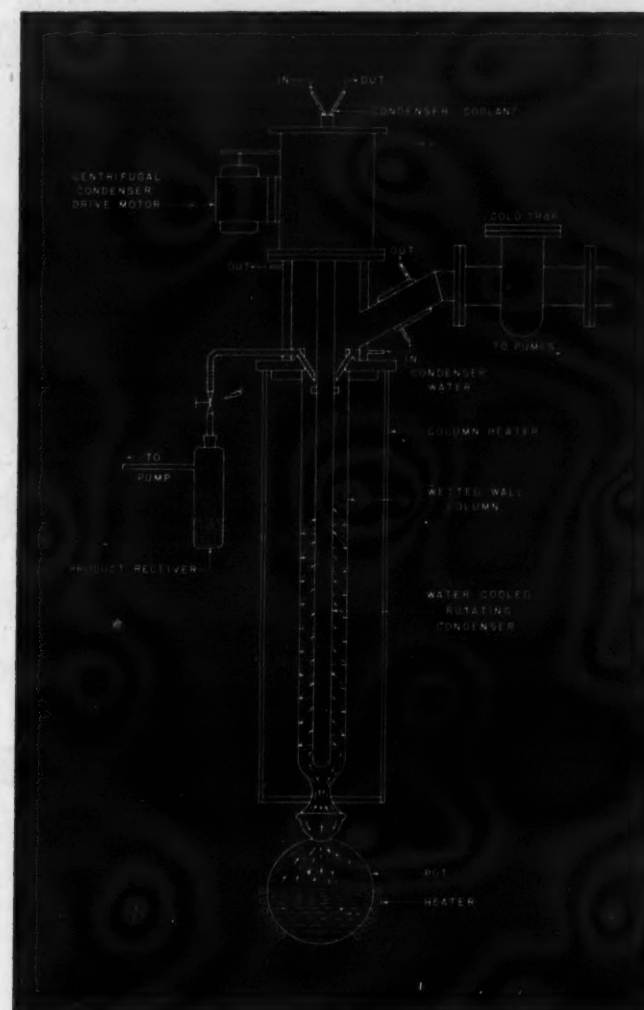
In construction of the calorimeter, resistance to flow was reduced as much as possible, so that gases having low vapor pressures could be passed through the system at satisfactory rates. All parts traversed by the gas are of monel metal.

The gas under study flows continuously at a constant rate through an insulated compartment, where it is heated electrically, and the specific heat is computed from heat input, temperature rise of the gas and rate of flow. Entering the calorimeter at the bottom, the gas flows upward through the central calorimeter tube of monel metal past a series of baffles. The baffles act as radiation shields and also promote thermal equilibrium between the gas and the tube walls.

In the central part of the calorimeter the gas traverses a labyrinth about the calorimeter heater while its tem-

HIGH VACUUM ROTARY

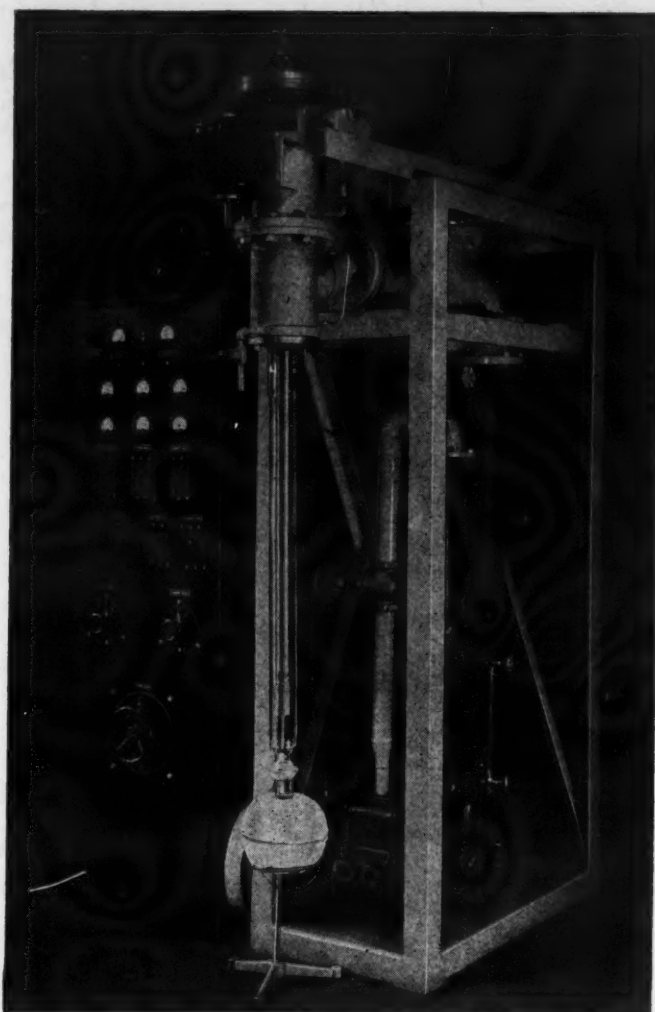
High fractionating capacity under High Vacuum creates new possibilities for the separation of liquids of high boiling point.



The unique principles of the centrifugal condenser type still are illustrated above. Rising vapor from the pot condenses on the cooled rotating cylinder. Condensate is then hurled off the condenser surface by centrifugal force and re-vaporized from the heated column. This cycle is repeated many times as the vapor moves up the annular space between the column and condenser, setting up a concentration gradient, with the more volatile components at the top where they are removed.

For the first time, equipment of great fractionating ability has been

Y FRACTIONATING STILL



For the first time, close fractionation under High Vacuum, comparable to the performance of packed columns, is possible.

evolved without introduction of the usual packed column with high impedance to gas or vapor flow.

The tremendous industrial potentialities of this new processing tool can only be realized when research chemists have had an opportunity to apply it to their problems. A laboratory unit is now available for research purposes. Inquiries for license arrangements for commercial operation are invited.

For further details, please write National Research Corporation, Cambridge 42, Massachusetts.

HIGH VACUUM FOR INDUSTRY
NATIONAL RESEARCH CORPORATION
Vacuum ENGINEERING
DIVISION

When inquiring specify CP 3431 . . . see information request blank, pgs. 2-3

DECEMBER, 1947

Ideas

perature is being raised. The labyrinth is designed to provide an isothermal exterior surface on this part of the calorimeter. The metal *radiation shield* extends this isothermal surface to a point very near to where the tube enters the copper *radiation shield*. Heat exchange by radiation is prevented by heating the shield to the temperature of the inner calorimeter wall with an electric heater adjusted manually according to thermocouple readings. The rise in the gas temperature is indicated by the *measuring thermocouple*.

After its temperature has been raised, the gas passes upward again past a series of baffles and out through the *flow-rate control valve*. The *exit tube heater* serves to establish a zero temperature gradient in the upper part of the tube, thus reducing heat transfer along the tube. The entire apparatus, except for the flow-rate control valve, is enclosed in a highly evacuated metal case (not shown) immersed in a constant temperature bath. Before entering the calorimeter, the gas flows through a helical coil, in which it is brought to the temperature of the bath.

The accuracy of the apparatus was checked by measuring the specific heat of oxygen, which had previously been calculated at the Bureau from the latest spectroscopic data for this gas. The experimental values obtained at -30° , 40° , and 90° C. differed from the spectroscopic values by 0.06, 0.00 and 0.10 per cent respectively. From a consideration of the data for oxygen, the probable error of the specific heats obtained with this calorimeter is estimated as 0.07 per cent.

The new calorimeter has been used at the Bureau to determine the specific heats from -30° to 90° C. of isobutane, isobutylene, 1-butene, *cis*-2-butene, butadiene, styren and ethylbenzene.

★

40-Page Manual Covers Steam Jet Ejectors, Test Code, Steam Jet Vacuum Refrigeration

Standards for steam jet ejectors and vacuum cooling are presented in a 40-page booklet, second edition. Booklet contains three sections, covering steam jet ejectors, test code for steam jet ejectors, and steam jet vacuum refrigeration equipment.

Part 1 includes timely recommendations on nomenclature, operating principles, types of assemblies, capacity, standard accessories and materials of construction.

Part 2 contains revised steam flow curves based on latest available data; a revised critical pressure ratio curve; recommendations covering measurement of motive steam, condensing water, pressure, and capacity; information on performance tests; revised illustrations of HEI standard flow nozzles; official HEI air orifice capacities; revised diagrammatic arrangements of apparatus for conducting various tests, and air water vapor mixture data.

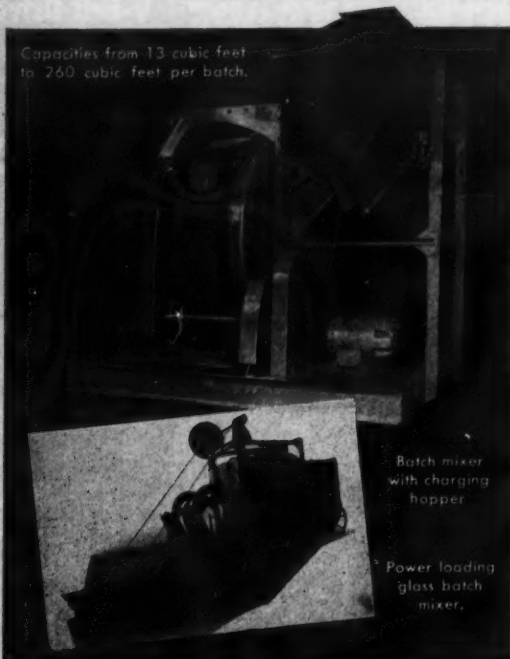
Part 3, on steam jet vacuum refrigeration equipment, presents recommended definitions, nomenclature, performance, construction, standard units and special types. Price, \$1. Do not send stamps. Remit direct to address below, or inquire on inquiry slip. "Standards of Heat Exchange Institute — Steam Jet Ejector and Vacuum Cooling Section."

HEAT EXCHANGE INSTITUTE, C. C. Rohrbach, secretary, Dept. CP, 90 West St., New York 6, N. Y.

When inquiring specify CP 3432 — see handy form pages 2-3

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Read all about these and other reasons why Ransome Batch Mixers are first choice for mixing glass batches, enamel frits, refractory cements, other silicate products, plastics, zinc furnace charges, soap powder, tobacco, snuff, brake lining and linoleum ingredients, etc. Write today for Bulletin No. 503.

Y7-4A



When inquiring specify CP 3433 — see handy form pages 2-3

New Literature

Vertical Pressure-Leaf Filters Built to Order for Corrosive Processes

Features of a line of custom-built, vertical pressure-leaf filters for chemical, food, fermentation and other process industries are explained in a two-color, 16-page booklet. Construction details are stressed, as in the wide range of non-corrosive materials adaptable to filtration equipment fabrication. Units are totally enclosed, with simplicity of design.

Of special interest is a flow diagram illustrating principles of pressure filtration using modern filteraids such as diatomaceous silica, etc. Products successfully filtered by pressure methods at high flow rates, resulting in brilliant filtrates, are listed. Sizes, capacities and dimensions are tabulated. Bulletin G-447.

NIAGARA FILTER CORPORATION, Dept. CP, 3080 Main St., Buffalo 14, N. Y.

When inquiring specify CP 3434 — see handy form pages 2-3

*

High Vacuum Pumps Efficient at Slow Speed In Dry or Moist Vacuum Conditions

Rotary piston high vacuum pumps in rated capacities of 17 to 845 cfm are described in a 16-page catalog. A list of uses lists specific applications in chemical processing, drug, food, metal refining, ceramics, testing instruments, laboratories and other fields. Operating advan-

tages, such as efficiency at slow pumping speed and operation in dry or moist vacuum conditions, are described. Nine sizes are illustrated.

Charts and tables cover volumetric efficiency of various sizes, pumping speeds at different pressures, determination of proper pump size, also specifications. Special type pumps, and a list of users, are presented. Catalog 84.

BEACH-RUSS COMPANY, Dept. CP, 50 Church St., New York 7, N. Y.

When inquiring specify CP 3436 — see handy form pages 2-3

*

Central Oil Purification System Cleans, Restores Oil for 136 Screw Machines

Oil purification, and benefits realized by its users, are the topic of an 8-page issue of "Clean Oil," manufacturer's publication. Two case histories are presented: that of a St. Louis electrical manufacturer employing oil purifiers for screw machine departments, and that of an inter-state truck-freight firm.

Literature includes diagram of complete central purification system for cutting oils, showing how oil is circulated from 136 machines through settling tanks and purifiers and back to machines, in continuous circuit. Also shown are typical installations of oil purifiers on gasoline and Cummins diesel engines. Units employ specially processed Fuller's earth. Economy of these units in the face of increased oil prices is stressed. Volume 3, Number 2 of "Clean Oil," describing specific

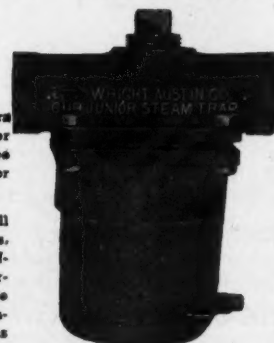
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Ring and fittings assembly for tank construction.

Lenape elliptical access openings (straight rings or flued and curved saddles) and fittings, of the pressure loaded or "self-energized" type are produced in sizes ranging from 4" x 6" to 18" x 24".

Swing support gear, to carry cover inwardly or outwardly of the pressure vessel, as illustrated at the left, is particularly convenient where frequent access is necessary. Various other types are available.

Write today for our Bulletin 4-61 and current price schedule S-47 — feel free to call upon our engineering department to discuss design and fabrication problems with you.



When inquiring specify CP 3437 — see handy form pages 2-3

benefits of oil purification, as reported by users, is available from the manufacturer.

HONAN-CRANE CORPORATION, Dept. CP, 922 Sixth St., Lebanon, Ind.

When inquiring specify CP 3438 — see handy form pages 2-3

New Cellulose Ester Thermoplastic Is Tough, Light, Lustrous and Versatile

"Tenite" cellulose ester thermoplastics are introduced in a 32-page booklet containing 100 illustrations, many of them in color. Literature tells what "Tenite" is, how it is made, and to what applications it is suited. Physical properties including toughness, light weight, natural luster, color and dimensional stability, are enumerated. One page presents a tabular summary of properties.

Molding and extrusion methods used for finished products are defined in a general way, and references to other company publications on this specific subject are included. An 11-page index of black-and-white photographs shows finished products of wide variety, from combs to cooling coils. Title: "Tenite."

TENNESSEE EASTMAN CORPORATION, Dept. CP, Kingsport, Tenn.

When inquiring specify CP 3439 — see handy form pages 2-3

Portable, Battery-Operated Unit "Hears" Thicknesses of Steel Pipe, Tanks, etc.

An "Audigage" thickness detector for measuring thickness of steel pipes and tanks, aluminum sheets, gas cylinders and other objects, from one side only, is described and shown in a 4-page bulletin. Instrument is described as a portable, battery-operated unit weighing only 14 lbs. complete with luggage-type carrying case. It is also effective on brass, aluminum, copper, nickel and glass, but not on porous materials such as cast iron and concrete. Other listed features include:

Detects laminar flaws and determines bonding between materials; measures steel thicknesses from 0.125 to 12", using same calibration for flat or curved surfaces; direct reading. Literature lists specifications, and describes how a vibrating quartz crystal transmits supersonic sound wave into material being tested.

BRANSON INSTRUMENTS, Inc., Dept. CP, Joe's Hill Road, Danbury, Conn.

When inquiring specify CP 3440 — see handy form pages 2-3

Corrosive-Handling Process Equipment Is Subject of General Catalog

Corrosion-resisting process equipment is the subject of an 8-page general catalog. 36 products are alphabetically listed, illustrated and described. Alloys in which they are available are given; features, sizes and capacities are noted, and numbers of bulletins giving more detailed information concerning individual items are included. The various alloys are classified as to composition, characteristics and principal corrosives for which recommended.

Equipment thus presented includes immersion coils, steam and hydraulic ejectors, exhaust fans, etching dishes, immersion heaters, heat exchangers, also jets, kettles, nozzles, pipe fittings, valves, pumps, tank outlets, sinks, tower sections, etc. General catalog "J."

THE DURIRON COMPANY, Inc., Dept. CP, Dayton 1, Ohio

When inquiring specify CP 3441 — see handy form pages 2-3

DECEMBER, 1947

90% OF ALL V-BELT DRIVE PROBLEMS SOLVED ECONOMICALLY WITH TEXROPE

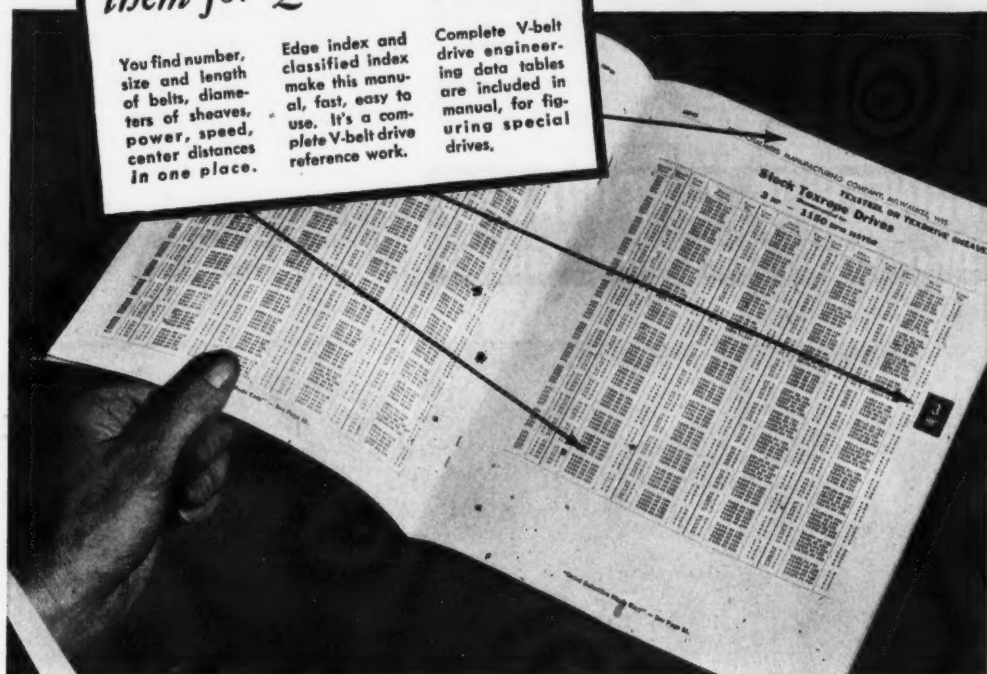
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You find number, size and length of belts, diameters of sheaves, power, speed, center distances in one place.

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When inquiring specify CP 3442 . . . see information request blank, pgs. 2-3

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Designed to meet your mixing and blending requirements on all liquids — based on 25 years mixing experience, the Alsop "Hy-Speed" Portable Mixer provides dependable, accurate and economical service that needs no supervision. Simply mount it to your present tank, its special clamp provides easy adjustment for any mixing action and makes every tank a mixing tank.

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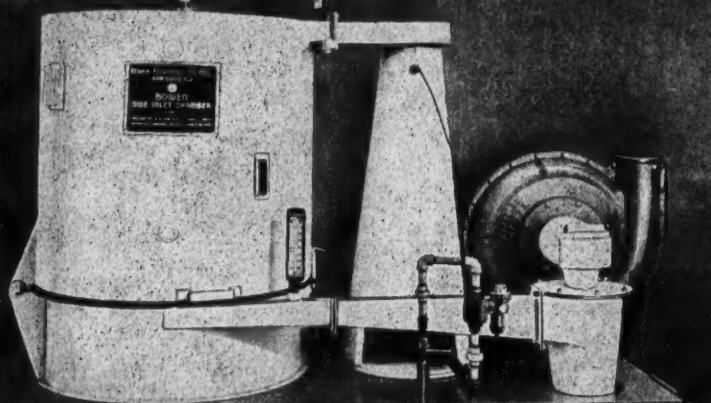
Write for catalog No. 745 showing our complete line of Top Entering type Mixers and Fixed Side Entering Agitators. The Alsop Engineering Corporation, 212 Alsop Square, Milldale, Connecticut.

ALSOP ENGINEERING CORPORATION

Filters, Filter Discs, Pumps, Tanks, Mixers, Agitators

When inquiring specify CP 3443 — see handy form pages 2-3

BOWEN LABORATORY SPRAY DRYER



...for developing new products and processes

● The Bowen Laboratory unit is designed to provide information which can be directly applied to the development of new products and processes. It is built under the same general designs as the large commercial Bowen engineered Spray Dryers. Factual information on request.

BOWEN ENGINEERING, INC.
Garwood 1, New Jersey



When inquiring specify CP 3444 — see handy form pages 2-3

New Literature

Measures, Indicates, Controls and Records Process Industry Variables

8-page, two-color bulletin describes an "Electronic Scriber" for measuring, indicating, controlling and permanently recording process industry variables. Interior mechanism and component parts are clearly shown and defined. Design, operating and specification data are included. Bulletin C2-1.

WHEELCO INSTRUMENTS COMPANY, Dept. CP, 847 W. Harrison St., Chicago 7, Ill.

When inquiring specify CP 3445 — see handy form pages 2-3

★

Heaters, Thawers Produce 2000 F. Flame Temperatures; Are Mobile, Portable

Equipment for many heating and thawing requirements is presented in a 16-page catalog, alphabetically indexed. Literature covers mobile melting kettles and portable melting furnaces, coil type water heaters, ground thawers, concrete heaters, thawing torches, etc. Described as producing 2000° F. flame temperatures that quickly heat, melt, thaw and dry. Bulletin 1047.

HAUCK MANUFACTURING COMPANY, Dept. CP, 124-136 Tenth St., Brooklyn 15, N. Y.

When inquiring specify CP 3446 — see handy form pages 2-3

★

Booklet Aids Planning, Visualizing of Toolroom Heat Treating Departments

"How to Plan Your Toolroom Heat Treating Department"

60 TIME SAVERS

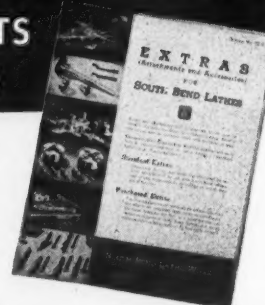
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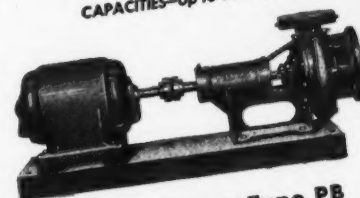
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When inquiring specify CP 3448
— see handy form pages 2-3

CHEMICAL PROCESSING Preview

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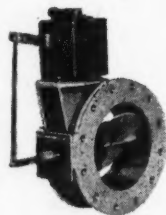
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Remove bottom plate, and dirt or solids drop or are blown out of sediment chamber; 1" to 16" pipe sizes; hand lever, hand wheel, chain wheel or special manual controls.



BUTTERFLY VALVES Manual or Automatic

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WAFER BUTTERFLY VALVES For Tight Spots in Pipe Lines

Rugged yet lightweight; require only 1 set of bolts; 4" to 72" pipe sizes; all manual and automatic remote controls.



New "Tells All" Catalog
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When inquiring specify CP 3449
— see handy form pages 2-3

New Literature

ment" is a 24-page booklet intended to assist those planning new, enlarged or changed departments of this type. Based on practical experience and information gathered as a result of design and operation of such departments by the manufacturer and subsidiaries, it discusses cost, selection of properly-sized furnaces, approximate requirements for floor space, etc.

Literature includes pictures of recommended layouts, and shows cost of auxiliary equipment. "Template" pages of furnaces, quench tanks, etc., are easily cut out and arranged to show how any contemplated toolroom set-up will look.

LINDBERG ENGINEERING COMPANY, Dept. CP, 2444 W. Hubbard St., Chicago 12, Ill.

When inquiring specify CP 3450 — see handy form pages 2-3

★

Offers Technical Data Useful in Designing Sound Equipment

Information useful in the design of sound equipment is contained in a technical bulletin of 4 pages. A table is included showing impedance vs. decibel loss, with values calculated for impedance mismatch, minimum "T" loss, and bridging pad loss.

Data on mixer circuits are included, showing circuit diagrams and applications. Attenuators with built-in cueing controls are described, with diagram.

THE DAVEN COMPANY, Dept. CP, 191 Central Ave., Newark 4, N. J.

When inquiring specify CP 3451 — see handy form pages 2-3

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Centrifugal Blower of 19,150 CFM capacity, driven by 200 HP steam turbine.

Rotary Positive Blower of 18,500 CFM capacity, with direct-connected motor drive.

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CUT PIPE
with less
Muscle



... This efficiency-balanced **RIDGID** takes the effort out of pipe-cutting

● Slap this sturdy **RIDGID** Cutter on a pipe and roll it right through in a few easy turns—surprisingly little muscular effort required. You see why the minute you get the efficient feel of its balanced malleable frame—and see the true easy action of its special tool-steel cutting wheel. Every cutter factory tested to insure perfect circle pipe cutting. Your choice of five sizes to 6" capacity; 4-wheel cutters to 4." Buy it at your Supply House.



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RIDGID

WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 3454 — see handy form pages 2-3

New Literature

5 General-Purpose Centrifugal Pumps Handle Up to 500 gpm, 100 ft. Head

Five sizes of pedestal-type centrifugal pumps for all general pumping requirements up to 500 gpm and 100 ft. head are discussed in a 4-page, illustrated bulletin. An unlimited range of intermediate capacities and heads are reported possible.

Operating advantages and construction features are included. Nine construction features are diagrammed. A pump, motor and Texrope drive selection table is shown, also standard dimension tables. Available with or without motor, pump can be gasoline or electric-powered. Also available as a unit with pump, steel base, Allis-Chalmers motor and Texrope V-belt equipment, literature relates. Bulletin, 52B6691.

ALLIS-CHALMERS MFG. COMPANY, Dept. CP, Milwaukee 1, Wis.

When inquiring specify CP 3455 — see handy form pages 2-3

★

Ram-Feed Stokers Have Capacities of 150-560 Boiler hp. with Single Retorts

An 8-page bulletin describes Types R and RI ram-feed stokers. A two-page cross-sectional diagram illustrates typical installation of one of these units in a boiler. Capacities with single retorts are 150 to 560 boiler hp., and twin retorts are available for larger requirements. May be equipped with automatic air volume and coal feed controls, literature reports.

There are 12 illustrations of this equipment and its

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When inquiring specify CP 3456 — see handy form pages 2-3



Saran **PLASTIC PIPE
AND TUBING**
"By Commercial"

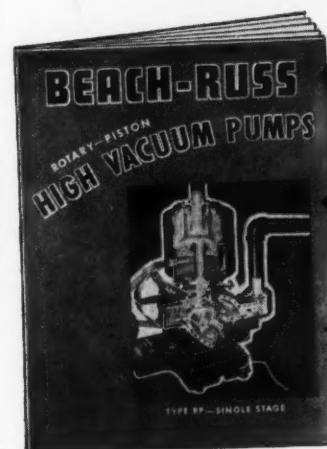
for thousands of industrial applications where a tough, strong and durable piping system is desired. Saran pipe is light in weight, attractive in appearance, and resistant to most acids and chemicals. Consult our Engineering Department on your application, or write for our new Catalog P-47 just off the press.

COMMERCIAL PLASTICS CO.

201 No. WELLS ST. CHICAGO 6, ILL.

When inquiring specify CP 3457 — see handy form pages 2-3

To Help You Improve Your Vacuum Processes BE SURE TO GET



**Sustained
Higher
Vacuum**

**Produced Faster
More Efficiently**

**At Slowest
Pumping Speed**

This new catalog tells why Beach-Russ Rotary Piston High Vacuum Pumps are better in your vacuum line, give higher sustained vacuum more efficiently, and improve your product or process at lower pumping cost.

WRITE FOR YOUR COPY TODAY

BEACH-RUSS COMPANY

46 CHURCH STREET, NEW YORK 7, N. Y.

When inquiring specify CP 3458 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

KOROSEAL-LINED
STORAGE TANK

Protection-

FROM CORROSION AND CONTAMINATION

● Protect your equipment from corrosion with Heil fabrication and linings. Put your protective lining problem up to Heil engineers. Send your drawings and outline your problem for our suggestions.

RUBBER • KOROSEAL • LEAD
HEILEX 445 • CERAMIC and CARBON
HEILEX 486 • SPECIAL METALS

SEND FOR
BULLETIN
No. 49

Heil

PROCESS EQUIPMENT CORP.
Formerly Heil Engineering Company
12901 ELMWOOD AVE. • CLEVELAND 11, OHIO

● SPECIALISTS IN CHEMICAL-PROOF CONSTRUCTION

When inquiring specify CP 3459 — see handy form pages 2-3

Now Available in standard types

COOPER Certified Stainless Steel Valves and Fittings

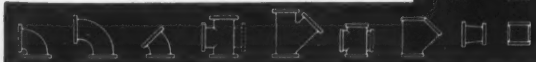
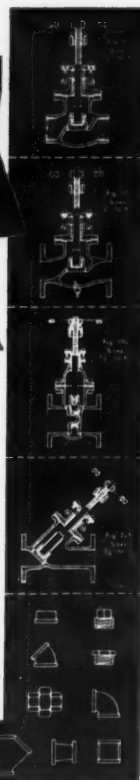
made of any wanted alloy to resist
Corrosion...Heat...Abrasion...

* In producing "Certified" valves, Cooper registers the analysis of each heat and stamps each casting with its heat number. When desired a certificate of the analysis is issued which applies to all Stainless Steel valve parts which come in contact with the fluid handled.

Check with your local distributor.

The COOPER ALLOY FOUNDRY CO.
150 BLOY STREET, HILLSIDE, N. J.

Specialists in Corrosion Resisting Stainless Steel
... For a Quarter of a Century ...



When inquiring specify CP 3460 — see handy form pages 2-3

DECEMBER, 1947

New Literature

component parts. Text describes construction, operation, etc. When operating intermittently, ram is said to remain at innermost point of feed stroke to seal coal tube against blowback. Bulletin S-31.

THE BROWNELL COMPANY, Dept. CP, 444 N. Findlay St., Dayton 1, Ohio

When inquiring specify CP 3461 — see handy form pages 2-3

★

Use Metallic Cloth In Screens, Leaves for all Types of Filters

Metallic filter cloths and their diversified uses are described in a 4-page bulletin. Photographs and descriptive matter reveal how this material is suited to fabrication of special screens and leaves for all types of filters. Various shapes and grades are depicted for use in pressure filters clarifying light liquids such as beer and dry cleaning solvents; for highly corrosive products, chemical processes such as petroleum and sugar refining, etc.

Fine and coarse units of pure copper, monel metal and stainless steel are shown, also units heavily coated with pure block tin. Other metals are also mentioned. One illustration shows a stainless steel screen panel on vibrating screen removing refuse from beet sugar water. Bulletin 81.

CAMBRIDGE WIRE CLOTH COMPANY, Dept. CP, Cambridge, Md.

When inquiring specify CP 3462 — see handy form pages 2-3

Accurate

Temperature Control NEED NOT BE COSTLY

New LESLIE Self-Contained Regulator controls temperature closely for heating or cooling service. Single seated in sizes 1/2"-4" inclusive for steam pressures to 125 psi (175 psi liquid) and steam temperatures to 450 deg. F.

Class "T" Temperature Regulator, designed particularly to meet the need for reliable, constant temperature control of industrial hot water supply, process liquids, etc. Responds quickly to all temperature changes . . . guaranteed for dead-end service.

Write for descriptive bulletin "Controlled Heat".

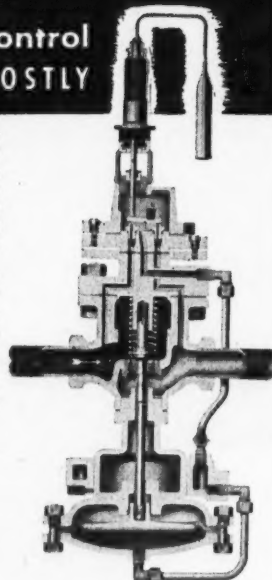
LESLIE CO.

261 GRANT AVENUE
LYNDHURST, NEW JERSEY

ESTABLISHED 1900
LESLIE
CO.

Lowest Overall Cost per Operating Year

PRESSURE REDUCING VALVES • • PRESSURE CONTROLLERS
PUMP GOVERNORS • • TEMPERATURE REGULATORS
SELF CLEANING STRAINERS • • LESLIE-TYFON WHISTLES



When inquiring specify CP 3463 — see handy form pages 2-3

PRECISION PIPE THREADS Pronto!

RIGID

No. 65R is ready
to thread 1" to 2"
pipe in 10 seconds



65R stands up handily on the floor.

● Here's the rugged self-contained pipe threader that's a pleasure to work with. No extra dies to carry around or lose. One set does the trick for 1," 1 1/4," 1 1/2" and 2" pipe — sets to size in 10 seconds! Workholder sets instantly — only one screw to tighten, no bushings. Hardened precision-cut chaser dies insure fast perfect threads on iron, steel, brass or copper pipe, or conduit. Every 65R factory tested. Ask your Supply House.

RIGID

WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 3464 — see handy form pages 2-3

Page 47

R-S valve Events

ISSUED PERIODICALLY BY R-S PRODUCTS CORPORATION, PHILADELPHIA 44, PA., FOR THOSE CONCERNED WITH FLOW CONTROL AND SHUT-OFF

D. W. (Dave) HOPKINS Executive Vice President

Announcement is made of the appointment of David W. Hopkins, widely known consulting engineer, as Executive Vice President of R-S Products Corporation. Hopkins has previously been Vice President and since 1939 in charge of the Valve Division of R-S Products.

Earlier in his career he served as consulting engineer and Vice President of V. E. Montgomery Company, Cincinnati, Ohio, where he specialized in processing and mechanical engineering.

After his graduation from Hughes High School, Cincinnati, in 1912 and the University of Pennsylvania in 1916 (mechanical engineering), he did post-graduate work in aeronautical engineering at the Massachusetts Institute of Technology.



(photo by Fabian Bachrach)

Noteworthy also in his background is extensive research at the University of Pennsylvania, with Professor W. S. Pardoe — resulting in many basic advances in valve construction and performance.

Mr. Hopkins was a Navy Pilot (USNR) in World War I and in his college days an All-American left end for three seasons.

Other Changes at R-S Products

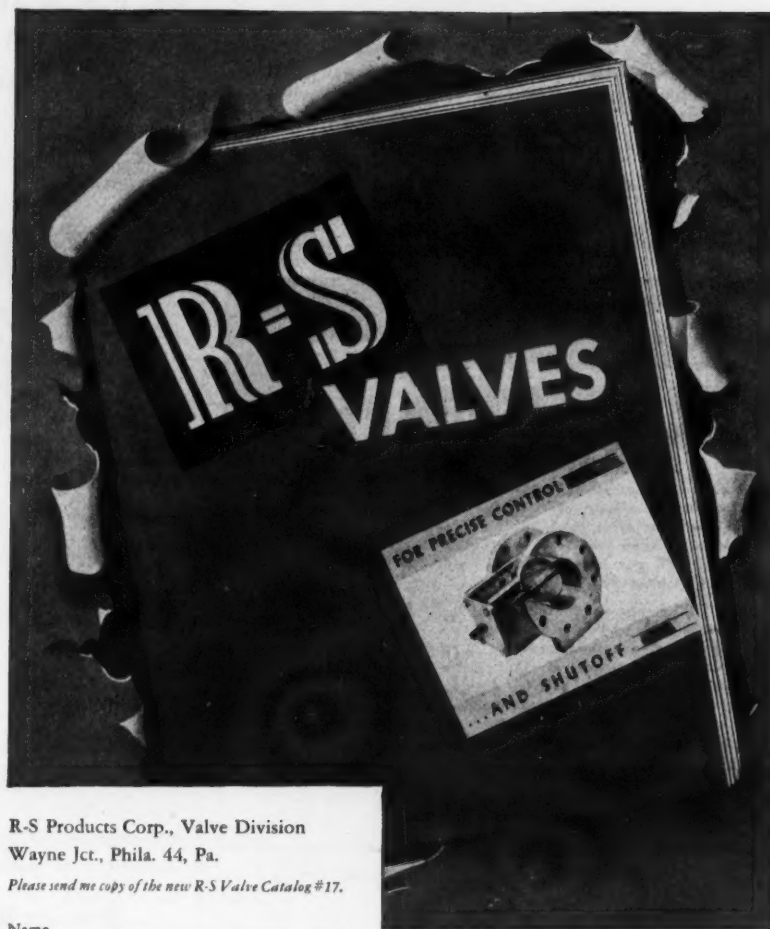
Russell C. Ayers has been named Sales Manager of the Valve Division. George B. Crawford has been named Chief Engineer of the Valve Division.

Both men have been with R-S for several years and have done a handsome job both for customers and distributors, for which the new titles and enlarged responsibilities are a just reward.

Excelsior!

JML:OP-LB

Send for YOUR copy
of the NEW
**R-S Valve Catalog
No. 17!**



R-S Products Corp., Valve Division
Wayne Jct., Phila. 44, Pa.

Please send me copy of the new R-S Valve Catalog #17.

Name

Title Company

Street Zone

City State

Fully descriptive, generously illustrated;
includes complete dimensional data on
all R-S Valves. Write, wire, or phone:
R-S PRODUCTS CORPORATION
Wayne Junction, Philadelphia 44, Pa.

New Literature

Stationary Vacuum Cleaning System Removes Boiler Soot Without Brushing, Blowing

Increased boiler efficiency through use of a stationary vacuum cleaning system is described, with pictures, in a 4-page bulletin. Literature points out that 1/16" of soot lowers efficiency 20%; and that the equipment described removes soot from return tubular or sectional boilers.

Boiler and flue cleaning for fire tube and sectional boilers is discussed. Method is said to eliminate brushing and avoid blowing soot out with compressed air. Sizes are recommended for vacuum producers, with a sectional diagram and photograph of a vacuum producer with primary and secondary soot separators. Vacuum tools, and a cross-sectional view of a soot separator, are included. Descriptive Bulletin 137.

THE SPENCER TURBINE COMPANY, Dept. CP, Hartford 6, Conn.

When inquiring specify CP 3466 — see handy form pages 2-3

★

48 and 240 ft. lb. Impact Machines Test Plastics and Metals

Two pendulum-type impact machines for making Charpy, Izod and tension tests on plastics and metals are graphically illustrated and described in a 4-page bulletin, size 8-1/2 x 11". Respective capacities: 48 and 240 ft. lbs. In addition to showing over-all and dismantled units, a series of six close-up photographs show underside of hammer as equipped for various tests. Bulletin 253.

THE BALDWIN LOCOMOTIVE WORKS, Testing Equipment Dept., Dept. CP, Philadelphia 42, Pa.

When inquiring specify CP 3467 — see handy form pages 2-3

★

System Warns of Combustible Gas, Vapor, in 6 to 12 Possible Areas

Multi-point combustible gas alarm systems which detect and measure flammable gas and/or vapor air concentrations in terms of explosibility are the subject of a 4-page, illustrated bulletin. Literature reveals how gas or vapor is remotely analyzed in any one or more of 6 to 12 possible areas sampled by a single system.

Explanation is given how the analyzer head electrically signals the control cabinet as conditions change in the area being sampled, how audible and visible alarms on control panel and in the area show which area caused the signals, and how false signals are prevented. A full-page schematic diagram shows relationship of units in the system. Technical Bulletin 1142.

DAVIS EMERGENCY EQUIPMENT COMPANY, INC., Dept. CP, 56 Halleck St., Newark, N. J.

When inquiring specify CP 3468 — see handy form pages 2-3

★

New Method of Hard-Facing Described As Faster, Less Costly

A 2-page bulletin describes "Sprayweld," a method for hard-facing by using a metallizing gun and "wire" composed of a powdered hard-facing alloy extruded with a plastic binder.

During spraying the plastic binder is completely volatilized, literature reports, and deposit consists entirely of

CHEMICAL PROCESSING Preview

When inquiring specify CP 3465 . . . see information request blank, pgs. 2-3

New Literature

the metallic constituent. Subsequent fusing, either by fusing torch or an attachment on the metallizing gun, is said to result in coating alloyed to base and physically and chemically identical to hard-facings of the same alloy applied by other methods. Advantages are said to include lower costs and higher production. Bulletin 53.

METALLIZING ENGINEERING COMPANY, Inc., Dept. CP, 38-14 30th St., Long Island City 1, N. Y.

When inquiring specify CP 3469 — see handy form pages 2-3

★

Hydraulic Cylinders Tilt Kettles or Agitators Smoothly on City Water Pressure

Hydraulic operating cylinders for tilting kettles or agitators are detailed in a 4-page bulletin. For use where ever-changing center of gravity threatens loss of product, damaged equipment, etc., these are corrosion-resistant units. Literature describes use with both trunnion kettles and tilting agitators. Fully illustrated.

Operating on city water pressure, a single valve is said to assure action "so smooth that a tea cup may be filled from a 300-gal. kettle." Emptied kettle remains in position for cleaning, or may be returned to upright position by reversing control valve. No latch is required. Available in 3, 4 and 6" diameters. Available water pressure plus size of receptacle determines cylinder size. Bulletin LM-11.

LEE METAL PRODUCTS COMPANY, INC., Dept. CP, Philipsburg, Penna.

When inquiring specify CP 3470 — see handy form pages 2-3

★

Reveals Simplified Methods for Determining Efficiency, Economy of Furnace Linings

Methods for simply and quickly determining the efficiency and economics of various refractory linings for industrial furnaces are contained in a 12-page reprint of a lecture by J. D. McCullough, head of engineering and service department, refractories division, The Babcock & Wilcox Co.

Illustrated with 12 charts and tables. Title: "Heat Losses in Furnace Linings." Bulletin 3-404.

THE BABCOCK & WILCOX COMPANY, Refractories Division, Dept. CP, 85 Liberty St., New York 6, N. Y.

When inquiring specify CP 3471 — see handy form pages 2-3

★

Lists Warehouse Stocks of Tool, High Speed Steels, and Nearest Source of Supply

Tool and high speed steel warehouse stocks are the subject of a 62-page catalog. A listing technique is used which not only covers types, shapes and sizes available, but shows exact location of each item in stock, or the nearest source of supply. Pages are graphed with manufacturer's 18 warehouses listed vertically, and sizes listed horizontally.

Symbols designating flats, squares and rounds indicate whether a given warehouse stocks a particular shape or size. Basic information is presented concerning listed products. Final pages are devoted to available sintered carbide products. Title: "Warehouse Stocks."

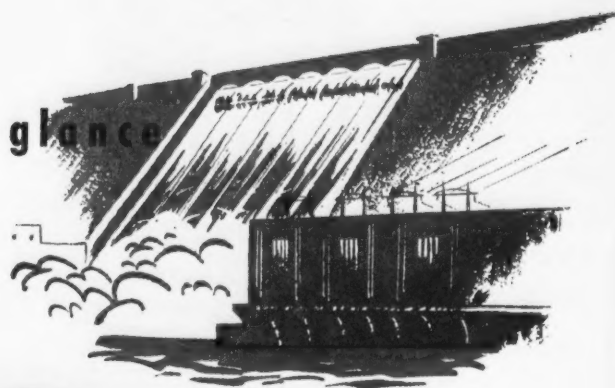
ALLEGHENY LUDLUM STEEL CORPORATION, Dept. CP, 2020 Oliver Bldg., Pittsburgh 22, Pa.

When inquiring specify CP 3472 — see handy form pages 2-3

DECEMBER, 1947

an "reason why"

shows flow at a glance



An SK Rotary Flow Indicator . . .

Installed in a pipe line . . .

Permits observation of flow . . .

Shows the condition of fluids . . .

At a glance.

The slightest fluid flow . . .

Causes rotation . . .

Of a five-bladed, plastic rotor . . .

Whose motion can be observed . . .

Through one or two sight glasses . . .

At one or opposite sides of the indicator.

By installing an SK Flow Indicator . . .

Power can be conserved . . .

Costly batches can be saved . . .

Continuous process can be maintained . . .

And equipment damage prevented.

SK Bulletin 18-W contains complete details . . .

Send for your copy—today.



SCHUTTE and KOERTING Company
Manufacturing Engineers

1173 THOMPSON ST., PHILADELPHIA 22, PA.

JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT
VALVES • ROTAMETERS • FLOW INDICATORS • GEAR PUMPS • STRAINERS
OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIATION TUBES

Schutte and Koerting have always quoted "Firm Prices"—a principle in good business, for all business.

When inquiring specify CP 3473 . . . see information request blank, pgs. 2-3

Here's the **MULTICLONE**
Story in a Nutshell...

IT SAVES SPACE

For, in addition to the unit itself being far more compact, its shape can be adjusted to fit various space requirements... long and narrow, square or wide. You can often utilize waste areas too small for other equipment.

Model	Capacity (cu. ft.)	Weight (lb.)
Model A	1.5	12
Model B	2.5	18
Model C	4.5	30

IT RECOVERS THE "FINES"

as well as the coarser particles. This results in high overall efficiency on any application!

IT IS UNUSUALLY ADAPTABLE

For, in addition to the shape adaptability, inlet-outlet connections are easily adaptable to meet special installation conditions!

IT IS SIMPLE

both to install and maintain, requires only single inlet and outlet ducts, and a single collecting hopper serves an entire bank of tubes!



On any dust recovery job
—large or small—
the **MULTICLONE**
has many advantages!

Why limit your dust recovery job to one or two performance features? The many Multicclone advantages—only a few of which are outlined here—are the result of more than 38 years of specialization in the science of dust recovery.

GET ALL THE FACTS. Send for booklet describing the many Multicclone advantages. Also let our trained engineering staff study your problem and show how Multicclone's savings benefit you. No obligation!



WESTERN Precipitation CORPORATION

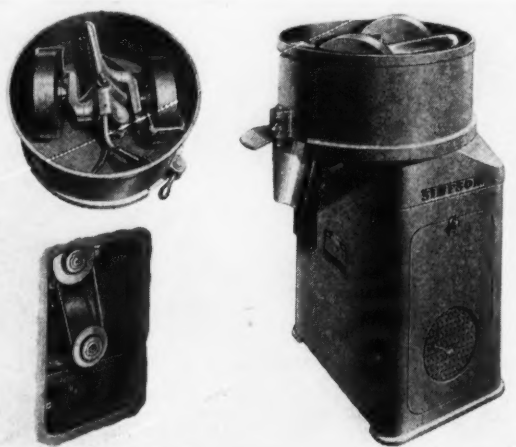
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR
COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Office: 1023 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LA SALLE ST. BLDG., 1 N. LA SALLE ST.,
CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

When inquiring specify CP 3474 — see handy form pages 2-3

Production Equipment

Muller-Type Mixer Mulls Any Dry, Semi-Dry or Plastic Material

Simplified, small production unit has capacity
of $\frac{1}{4}$ to $\frac{1}{2}$ cu. ft.



Top, side and interior of muller-type mixer

USES — Muller-type mixer for smaller production requirements, pilot plants and laboratory work. For mulling any type of dry, semi-dry or plastic material.

FEATURES — Simplified operation. Small, yet versatile, with wide mixing applications.

DESCRIPTION — Has capacity of $\frac{1}{4}$ to $\frac{1}{2}$ cu. ft. per batch. Unit is entirely self-contained on compact, "work-high" pedestal mount measuring 28" wide, 41" high, maximum.

Access to 1-1/2 hp V-belt variable speed drive is through removable front panel. Positive push-button electric control. Streamlined plow-and-scraper assembly keeps dust out of mix and is said to be virtually self-cleaning, discharging material through sliding-type discharge opening.

Available with varied muller weights.

NATIONAL ENGINEERING COMPANY, Dept. CP, 613 Machinery Hall Bldg., Chicago 6, Ill.

When inquiring specify CP 3475 — see handy form pages 2-3

Respirator-Filter 1/8" Thick Stops Microscopic, Poisonous Dusts

5-sq.-in.-surface filters dusts under 24-millionths-
of-an-inch diameter

USES — Respirator with dust filter for protecting industrial workers exposed to microscopic, poisonous and disease-producing dusts smaller in diameter than 24 millionths of an inch.

For protection against toxic dusts such as lead, cadmium, arsenic, chromium, etc.; pneumoniosis-producing dusts, free silica and asbestos, and nuisance dusts such as iron ore, coal, coke, aluminum and limestone.

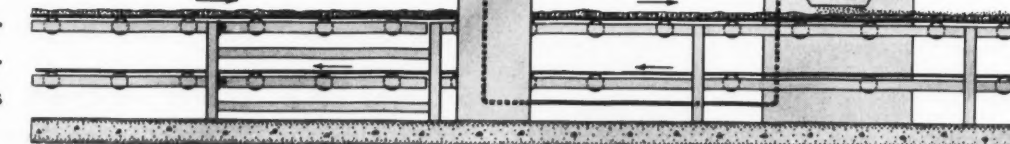
AS EXHIBITED AT THE CHEMICAL INDUSTRIES SHOW

BUILDERS

Conveyoflo

THE FLOW METER FOR DRY MATERIALS

Continuously weighs dry materials on conveyor belt. Proportions secondary dry materials and liquids to preset ratios.



BUILDERS-PROVIDENCE, INC. OMEGA MACHINE CO.

(Divisions of Builders Iron Foundry)

47 CODDING ST., PROVIDENCE 1, R. I.

OMEGA

DRY FEEDERS GRAVIMETRIC VOLUMETRIC

FEEDERS FOR:

Continuous Blending
Batching
Process Filters
Grinders
Dryers
Filtration Plants
Waste Disposal

IT WILL PAY YOU TO INVESTIGATE THE MONEY-SAVING FEATURES OF THIS EQUIPMENT

When inquiring specify CP 3476 . . . see information request blank, pgs. 2-3

FEATURES — Increased efficiency is accomplished without proportionate increase in breathing resistance, making possible an approved respirator filter which is described as being "of the smallest area so far developed." Ability to prevent passage of dust is said to be "40 times greater than untreated filters."

Reduced weight and increased field of vision, both vertically and horizontally. Protects respiratory system from a combination of contaminating dusts of all types. Extensively tested. In one of the tests, shown in illus-



Worker wearing new respirator and dust filter is sprayed with carbon black by C. L. Hazelton of American Optical Company's research laboratory

tration, a worker wearing the respirator is sprayed with carbon black. Clear areas of skin around nose and mouth, upon removal of the respirator, testify to filtering efficiency. Product is approved by U. S. Bureau of Mines.

DESCRIPTION — Filter is $\frac{1}{8}$ " thick, slightly more than 5 sq. inches in area, and consists of a chemically-treated felt in a container which is radically reduced in thickness, contributing to reduced weight of respirator.

Protecting against particles smaller in diameter than 24 millionths of an inch, the filter is said to be the equivalent in dust filtering efficiency of untreated filters of the same thickness and 42 sq. inches or more in area. It is equipped with an easily-changed gauze pre-filter for catching larger particles of dust and dirt. Respirator R-2000.

AMERICAN OPTICAL COMPANY, Dept. CP, Southbridge, Mass.

When inquiring specify CP 3477 — see handy form pages 2-3

★

Rectangular Magnets Include Double-Gap, Self-Cleaning, Suspended, Spout Types

Illustrations and descriptions of rectangular, double-gap electromagnet, suspended, spout and plate magnets, also wet-type magnets for submerged installations, are presented in a 12-page catalog. Literature includes first printed description of manufacturer's self-cleaning rectangular magnet: a suspended unit equipped with cross-belt which automatically discharges iron.

Installation photographs show applications to protect equipment from tramp iron, prevent fires and explosions, purify non-magnetic products and recover tools and magnetic scrap. Catalog 301-A.

DINGS MAGNETIC SEPARATOR COMPANY, Dept. CP, 4740 W. McGeogh Ave., Milwaukee 14, Wis.

When inquiring specify CP 3478 — see handy form pages 2-3

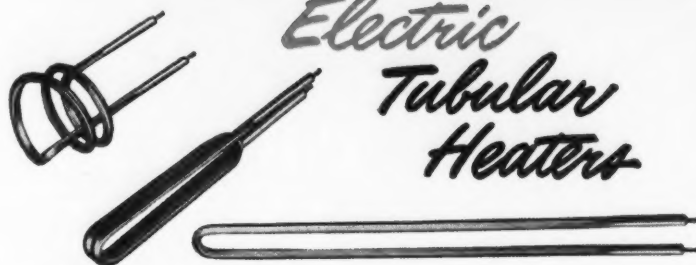
DECEMBER, 1947

HEAT

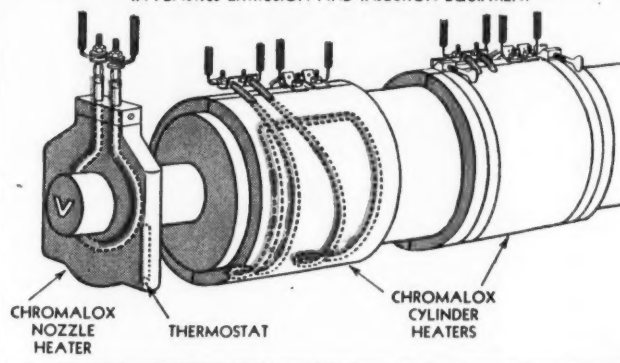
curved to fit your needs!

Chromalox

Electric Tubular Heaters



CHROMALOX ELECTRIC TUBULAR HEATERS CAST INTO ALUMINUM FOR USE IN PLASTICS EXTRUSION AND INJECTION EQUIPMENT



The above is only one example of the many types of applications easily obtained with CHROMALOX Electric Tubular Heaters. These heaters can be bent and formed for heating processing equipment, tanks, kettles, dies, platens and irregular surfaces.

Straight Tubular Units are used for convection or radiant heaters in ovens, platens and other high temperature equipment. Accurate temperature controls, with thermostats, guard against excessive processing temperatures.

CHROMALOX Application Engineers will gladly work with you on your heating problems.



CHROMALOX

Electric Heat at its Best

EDWIN L. WIEGAND COMPANY • 7517 THOMAS BLVD. • PITTSBURGH, PA.

When inquiring specify CP 3479 . . . see information request blank, pgs. 2-3

Guide to CHROMALOX Electric Heat applications

Check this List

- | | |
|-----------------------|--------------------------|
| • Air Heaters | • Ink Dryers |
| • Annealing Ovens | • Labeling Adhesives |
| • Armature Heaters | • Lacquer Dryers |
| • Asphalt Melting | • Lens Cementing |
| • Bobbitt Melting | • Matrix Presses |
| • Baking Ovens | • Melting Pots |
| • Barrel Heaters | • Mold Heating |
| • Branding | • Molten Salt Baths |
| • Broilers & Hatches | • Oil Baths |
| • Can Soldering | • Oven Heaters |
| • Cast Heating | • Package Sealers |
| • Cleaning Tanks | • Paint Dryers |
| • Coating Tanks | • Pipe Heating |
| • Core Baking | • Pitch Pots |
| • Degreasers | • Plastic Extruders |
| • Dehydrating | • Platen Heaters |
| • Die Heating | • Plating Baths |
| • Distilling | • Preform Heating |
| • Dryers | • Print Drying |
| • Dropping Resistors | • Process Air |
| • Drum Heating | • Process Kettles |
| • Drying Ovens | • Radiant Heating |
| • Duct Heaters | • Roll Heaters |
| • Electroplating | • Room Heaters |
| • Embossing Dies | • Sealing Equipment |
| • Film Dryers | • Soaking Tanks |
| • Foundry Molds | • Soldering Irons |
| • Fuel Oil Preheating | • Space Heaters |
| • Galvanizing | • Steam Generators |
| • Gas Heating | • Steam Superheaters |
| • Glue Cookers | • Sterilizers |
| • Glue Pots | • Tempering Baths |
| • Glue Setting | • Tinning Pots |
| • Hair Dryers | • Tire Recapping |
| • Heat Sealers | • Varnish Drying |
| • Hot Plates | • Volatile Fluid Heating |
| • Humidity Control | • Vulcanizers |
| • Infra Red Heating | • Water Heaters |
| | • Wax Melting |

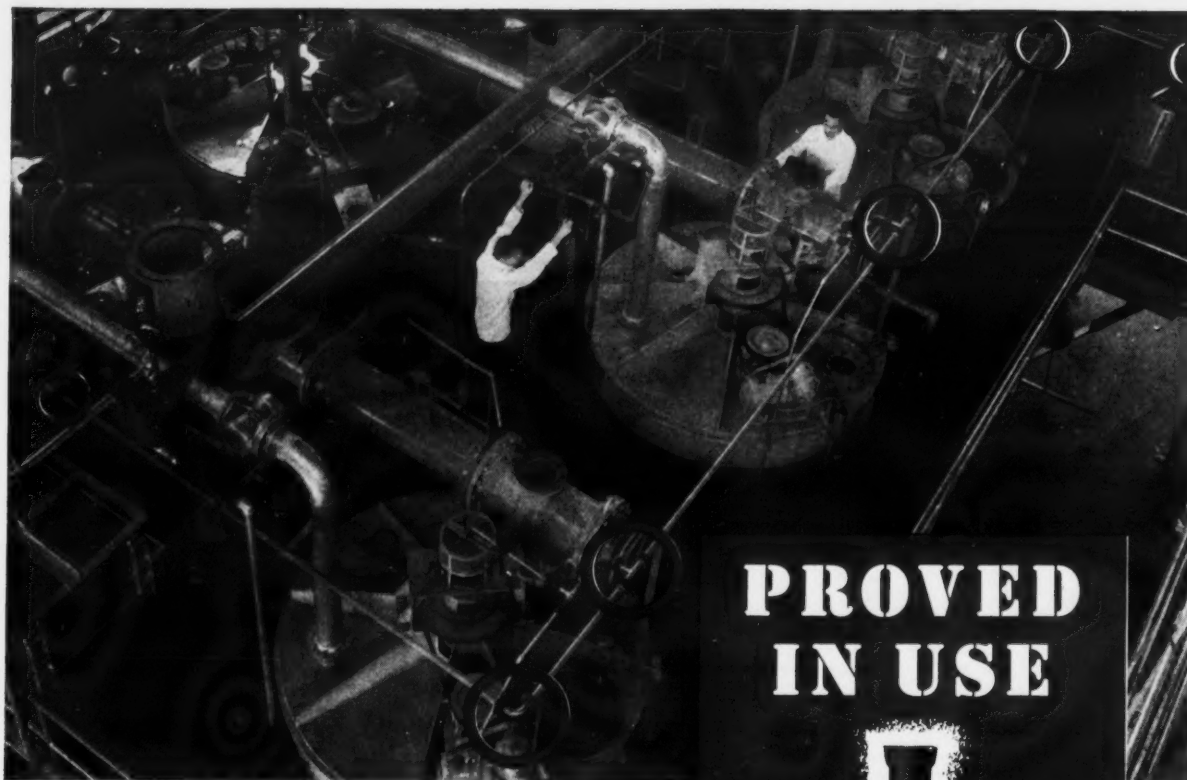
and Hundreds of other Applications throughout Industry

GET THIS BOOKLET

It is loaded with practical ideas which will save you time, money and labor in all types of industrial heating applications.



IC-35



Tri-Clover *Conical End* Fittings provide **CORROSION-RESISTANT** Conveying Lines at **LOWER COST**

Illustrated above is one of the increasing number of large liquid conveying line installations assembled with Tri-Clover stainless steel type 316 Conical End fittings throughout. This installation, at the Plymouth, Fla., plant of Vacuum Foods, Inc., has attracted wide interest because of advanced engineering techniques employed.

Through the use of Tri-Clover Flanged Type Conical End fittings and stainless steel light gauge tubing, companies like this are realizing tremendous savings in engineering and installation costs. In addition, they are assured of longer fitting and line life, freedom from leakage, and complete protection against product contamination.

Get the full story now. Send for complete catalog 847.

Tri-Clover

MACHINE CO.

Kenosha, Wisconsin

TRI-ALLOY AND STAINLESS STEEL
SANITARY FITTINGS, VALVES,
PUMPS, TUBING, SPECIALTIES

FABRICATED STAINLESS STEEL
INDUSTRIAL FITTINGS AND
INDUSTRIAL PUMPS

THE Complete LINE

PROVED IN USE



Tri-Clover Conical End fittings are available in a complete line of 1/2", 1", 1 1/2", 2", 3", 4", 6", 8", 10", 12", 14", 16", 18", 20", 24" O.D. sizes. They are the fast method of connecting through lock-tight flanges of stainless steel, aluminum, copper, brass, and other materials.



Be sure to see the Tri-Clover exhibit at the New York Chemical Exposition... BOOTH 567-568

Ask about Zephyrweld STAINLESS STEEL WELDING FITTINGS for permanent installations...

Available in a complete line, in sizes from 1" O.D. through 24" O.D., fabricated from stainless steel type 304, 316 or 347*. No mitre joints—sweep all design—no internal threads or pockets—joints are flush.
(*Above 4" only 316 or 347).

Production Equipment

36-Page Engineering Data Book Covers Pipe and Fin Coil Calculations

A 36-page engineering data book provides information on all fundamentals of pipe and fin coil calculation for laying out installations for heating and cooling applications. Illustrated with photographs, dimensional diagrams and tables, literature covers heat transfer "K" factors for all ranges of heating and cooling from minus 60 to plus 350° F.

It also gives recommended air velocities and fin spacing for fin coils, and shows in detail how to calculate and design pipe and fin coils for all common heating and cooling loads. Besides reference and design, it covers inspecting, testing and finishing of coils; calculation of heating and cooling coils; methods of computing fin coil surfaces; application of coils to particular types of heating and cooling units; properties of saturated steam. Price, \$1.50. Remit direct to manufacturer, name below, or inquire on inquiry slip. "Engineering Data Book."

REMPE COMPANY, Dept. CP, 340 N. Sacramento Blvd., Chicago 12, Ill.

When inquiring specify CP 3481 — see handy form pages 2-3

★

Applies 9 Standard Beadings to Plastic Sheets

Machine has 500-1000 inch-per-minute speeds, quickly interchangeable die combinations



Sheet Plastic Production Bearer

USES — For production-beading of sheet plastics. For beading straight edges of cellulose acetate, ethyl cellulose, vinyl acetate, cellulose nitrate and similar thermoplastic-type materials in sheet, roll, die-cut blank and strip form.

For sheet plastic fabricators, including manufacturers of parts, products and packages.

FEATURES — Designed to meet a broad range of beading requirements. Quickly interchangeable from one die combination to another when producing different types and sizes of beads. Hence, reduces production interruptions and resulting downtime.

Makes it possible to compensate for variations encountered in material characteristics, room temperature and atmospheric conditions. Precision-engineered, combining the uniformity, output-capacity, high speed operation and low operating cost required in volume-fabrication of quality plastic sheet.

DESCRIPTION — Beads at rate of 500 to 1000 inches per minute, depending on type and thickness of ma-

CHEMICAL PROCESSING Preview

When inquiring specify CP 3480 . . . see information request blank, pgs. 2-3

NOW ERASE ELECTRICALLY

**less effort-
less time-
cleaner!**



A handy tool in any drafting room, art, statistical, stenographic or accounting department, this new Bruning Electric Erasing Machine assures clean, smooth erasures — operates on 110-115 volts A.C., 50 or 60 cycle. A hollow shaft in the machine firmly holds a 7-inch eraser, eliminates waste and the nuisance of frequent changing. Erasers — soft, medium or hard — are easily inserted in the shaft. An especially designed induction-type motor, mounted in rubber, assures smooth, quiet operation. Precision ball bearings are permanently lubricated. Sturdy yet light in weight, the machine fits the hand comfortably, with control switch button conveniently located for finger-tip control. For complete information, write Charles Bruning Company, Inc., 4706-18 Montrose Avenue, Chicago 41, Illinois.

BRUNING Since 1897

When inquiring specify CP 3482 — see handy form pages 2-3

Production Equipment

material in process. Adjustable to accommodate materials from .005 to .020" thick.

Used with certain recommended interchangeable forming and cooling die combinations, "Thermobeaders" produces 9 different, standard-size beads and shapes. They are:

- 1) 1/16" round bead on .005-.015" stock; 2) 3/32" superflex type on .005-.015 stock; 3) 1/8" square inside corner, round bead on material .005-.020" thick; 4) 1/8" superflex on .0075-.020" material; 5) 5/32" square inside corner, round bead on stock .0075-.020" thick; 6) 5/32" superflex bead on .0075-.020" material; 7) 3/16" square inside corner, round bead on .0075-.020" stock; 8) narrow, flat bead, 3/32-1/4" wide, on .005-.020" stock; 9) 1/8" beaded snap-in space for inserting bottom of circular containers.

Equipped with all essential controls and operating on 115-230 volts, 50/60 cycle, single phase current supply. Design improvements include accurate, automatic die-temperature control; thermostatically-controlled preheating and forming dies; variable transmission, permitting close regulation of machine operating speed in relation to die temperatures.

Positive thermostatic operation is achieved through use of sensitive plug-in relays. An air-cooled, duct-type frame prevents distortion of heated die-holders. Equipped with universal-type preheating die.

TABER INSTRUMENT CORPORATION, Sheet Plastics Equipment Division, Dept. CP, 111 Goundry St., North Tonawanda, N. Y.

When inquiring specify CP 3484 — see handy form pages 2-3

Keep Hands Safe and Dry

with Extra-Tough

Stanzoids



of
neoprene
impregnated
canvas

● They're liquid-proof — fully impregnated with extra-tough milled type (not latex) neoprene. Resist damage in oils, acids, caustics and stand hard abrasive wear. You get extra hand safety at low cost per day of wear. Pioneer-processed neoprene can't peel; sure-gripping non-slip surface for easy work. Black, standard comfort-fit sizes; A-23, knit wrist; G-25, gauntlet. Write today for facts about super-service Stanzoid Work Gloves.

All-Neoprene Stanzoids — Unique non-slip finish gives workers assurance, speed.

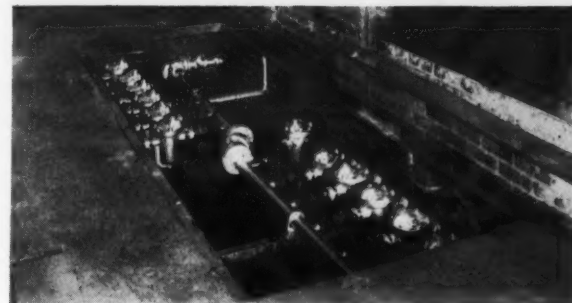


Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
239 Tiffin Rd., Willard, Ohio, U.S.A.
Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

When inquiring specify CP 3485 — see handy form pages 2-3

For Fuel Savings and Maximum Production



SELECT THE CORRECT STEAM TRAP FOR THE JOB!

IT IS ESSENTIAL that steam traps be correctly selected for each piece of equipment in your plant. Here's a convenient check list for proper trap selection:*

1. DOES THE TRAP HAVE ADEQUATE CAPACITY FOR PEAK LOADS? Traps should have the capacity to take care of the above normal condensate loads encountered in starting up cold equipment. This will often save hours of warming-up time and greatly increase production. Armstrong trap capacities are very conservatively based on actual tests with hot condensate, and a liberal safety factor is recommended.

2. IS THE TRAP SUITABLE FOR THE PRESSURE? A trap won't work satisfactorily at a steam pressure above its rating.

3. WILL THE TRAP DISCHARGE AIR? Air (always present in steam) lowers temperatures and slows up production. Armstrong traps discharge all normal amounts of air along with condensate.

*The 36-page ARMSTRONG STEAM TRAP BOOK gives complete data on trap selection and installation on all classes of equipment. Send for your copy. ARMSTRONG MACHINE WORKS, 880 Maple Street, Three Rivers, Michigan.

PROOF That Armstrong Traps Pay Dividends

1/2 TON COAL SAVED daily at American Snuff Co., Clarksville, Tenn., with 12 No. 813 traps on tobacco drying kiln. Also 1/2 hour faster heating up. 30% LESS fuel consumption, 65% LESS water consumption and more extraction of oil from material being crushed, after use of Armstrong traps. — Pacific Nut Oil Co., Los Angeles.

ONE BOILER INSTEAD OF TWO used after installing Armstrong traps. Also 30-ton-per-month saving in fuel. — Daniel Bassi and Co., Buenos Aires, Argentina.

No. 2 of a series of advertisements devoted to improving efficiency through better trapping



ARMSTRONG *Invented Bucket* **STEAM TRAPS**
Over a Million in Use

When inquiring specify CP 3486 — see handy form pages 2-3

Pritchard Small and Medium
**COOLING
TOWERS**
Shipped from Stock!

INDUCED DRAFT . . .
Horizontal or vertical air flow, with ultra-efficient Moore "Lifetime" Fans. No gears, no belts, no couplings. No corrosion problems. Heavy-duty All-Monel pressure blowers, trouble-free under most severe conditions. Slow-speed, ball bearing, direct drive motor is IN the hub. Other advanced and thoroughly proved mechanical and structural features throughout.

NATURAL DRAFT . . .
Standard spray towers or with coil systems in base, with or without basins or internal decks. Low pressure water distribution. Bolted assembly of Redwood or All-Metal, shipped complete.

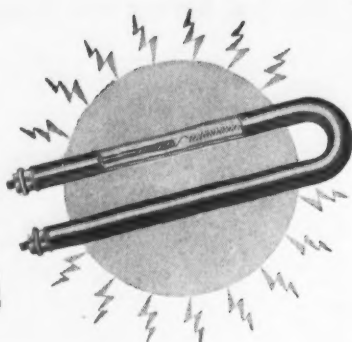
ALSO ALL OTHER TYPES AND SIZES; 20 YEARS OF COOLING TOWER LEADERSHIP

For further information see Sweet's Files, Chemical Engineering Catalog, ASH & VE Guide, etc.

J.E. Pritchard & Co.
ENGINEERS • CONSTRUCTORS • MANUFACTURERS
FIDELITY BUILDING, KANSAS CITY 4, MISSOURI

When inquiring specify CP 3483 — see handy form pages 2-3

YALE
Hottest
News In
Electric
Heat!



Yes, YALE... the No. 1 name in locks... now offers an enclosed electric heating element that you know will give uniform heat. YALE's famous manufacturing controls assure:

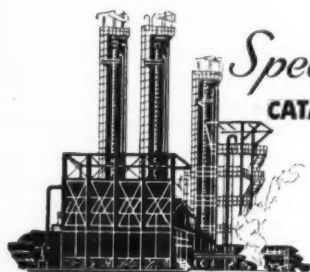
1. uniform distribution of the refractory within the sheath for uniform insulation
2. accurately centralized location of the resistor for uniform heat transfer

Immediate shipment on Rod-Type Heating Units—first of a complete YALE line of electric heating units. Send for further information. The Yale & Towne Manufacturing Company, YALE Electric Heating Unit Sales, Room 1043, Chrysler Building, New York 17, N. Y., MUrray Hill 9-6700.

YALE Electric UNIFORM HEAT
THE BRIGHT SPOT IN ELECTRIC HEATING

YALE Makers of the famous YALE lines of Locks, Hardware, Door Closers, Hoists and Industrial Trucks

When inquiring specify CP 3487 — see handy form pages 2-3



Specified for
CATALYTIC SUPPORTS

ALUNDUM:
Grain
Pellets
Aggregate
Tubes
Spheres

Alundum Catalytic supports can be furnished both in the form of pellets, tubes and spheres manufactured to specified size and shape and in the form grain and crushed aggregates. Aggregates made with controlled porosity and pore size have been used as catalytic agents as well as carriers.



See them at Chemical Show —
Booth 415 and 416.

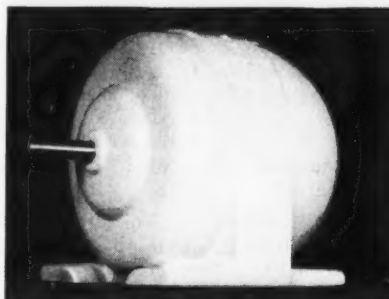
NORTON COMPANY
WORCESTER 6, MASS.

When inquiring specify CP 3488 — see handy form pages 2-3

Production Equipment

Light Weight Motor is Drip-Proof

Continuous duty for 220/440 volt, 60 cycle, 3 phase
in 1/4, 1/3, 1/2 and 3/4 horsepower



Fractional horsepower Electra-motor

USES — This light weight fractional horsepower motor is designed for vertical and horizontal mounting.

FEATURES — Weight is reduced approximately 50% through new, simplified design and high-tensile-strength alloys.

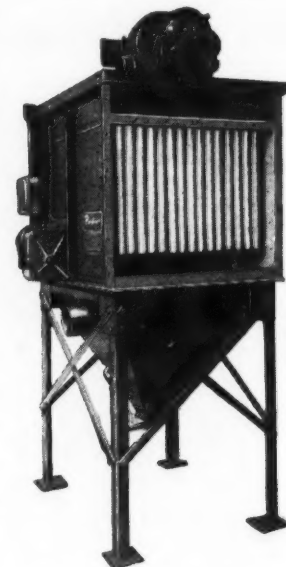
DESCRIPTION — Bearings are double-sealed and lubricated for life. Shaft end-play is restricted to a minimum. Both stator and rotor cores are easily accessible. Positive ventilation is provided by a new design. Base

**CONTROL
DUST!**

**Put This Pangborn
Unit Type Dust
Collector Close to
the Dust Source**

Where bad dust conditions are concentrated, install the Pangborn "CL"—a small-sized factory-assembled unit. Unit type collectors located directly at the "dust pockets" give you flexibility—may offer greater savings than a large "central" collector.

For Bulletin 912, address Pangborn, world's largest manufacturer of dust control and blast cleaning equipment at 286 Pangborn Boulevard, Hagerstown, Maryland.



Pangborn Unit Type "CL" — all-metal except filter cloth, non-sag screen frames, individually removable screens, motor-driven screen shaker. 180-820 sq. ft. cloth area.

Pangborn
DUST CONTROL

**Turns DUST LOSSES
INTO PROFITS**

When inquiring specify CP 3489 — see handy form pages 2-3

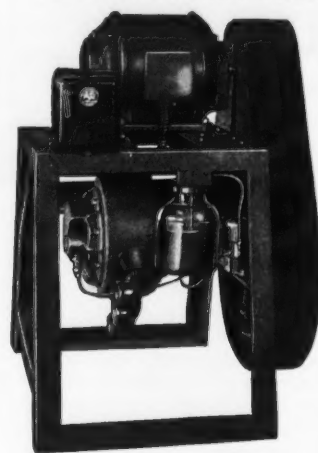
ROTARY

LAMMERT

QUIET

VACUUM PUMPS

VACUUM TO 0.02 M.M. BAR. 3-580 C.F.M.



Investigate!
MODEL SWMF.

NEW!

Continuous
Self
Purging
Principle

Expels the
Contaminating
Influence!
PERFORMANCE

ENDURING

HIGH
VACUUM

LAMMERT & MANN CO.

215-21 N. WOOD ST.

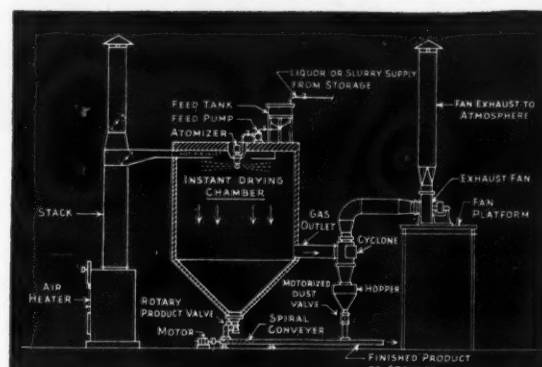
CHICAGO 12, ILL.

A HALF CENTURY

OF SERVICE

TO SCIENCE AND INDUSTRY

When inquiring specify CP 3490 — see handy form pages 2-3



LOW COST DRYING

with The "INSTANT DRYING" System

- Less power and a smaller connected load required.
- Engineered to be trouble free.
- Large capacity, rugged construction.
- Requires a minimum of labor and attention (one man can supervise the operation of a battery of several Instant Drying units per shift).

Many of your industrial colleagues have proved the savings that can be secured through the use of THE INSTANT DRYING SYSTEM. Write to us on your drying problem. We shall answer your questions and send you detailed literature on THE INSTANT DRYING SYSTEM.

INSTANT DRYING CORPORATION

101 Park Avenue, New York 17, N.Y.

Testing and Research Laboratories at Poughkeepsie, N. Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., New York

When inquiring specify CP 3491 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

Production Equipment

has slotted holes for belt adjustment. Load-bearing frame is one-piece, providing for precision bearing alignment.

ELECTRA-MOTORS, INC., Dept. CP, 1110 N. Lemon St., Anaheim, Calif.

When inquiring specify CP 3492 — see handy form pages 2-3

★

Small Fluorescent Lamps Minimize Heat, Reflection

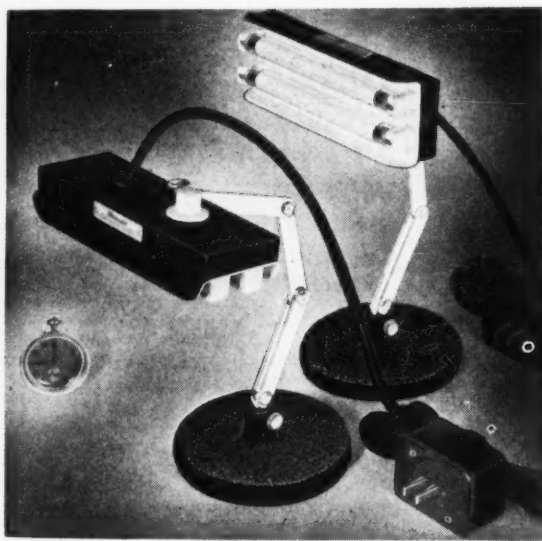
May be attached to machines or used for bench, small precision work

USES — Miniature fluorescent lamp for use where a small, adjustable-position unit having very little heat radiation is essential. May be attached to standard or special purpose machines.

For bench use where close work is being done. For small precision work.

FEATURES — Minimizes objectionable bright spots and reflections. Provides a cool light of high intensity from a small source. Permits close work without radiant heat or hot surfaces. Bulbs may be obtained at any electrical supply source.

DESCRIPTION — Produces a light intensity of 550 foot-candles at a 3" working distance, and a color temperature of 3500° Kelvin. Intense illumination converges on subject from widely divergent angles.



Miniature fluorescent lamps

Normal operating temperature, 115° F. Operation limited to 115 volts, 60 cycle AC. To start, twist starter knob on lamp after plugging ballast reactor into standard electrical outlet. Six-foot lamp cord. Twin 4-watt bulbs of standard manufacture are rated at 2500 hours normal life. Lamp is finished with baked black wrinkle exterior and baked white enamel reflector.

Normally furnished with supporting bracket and cast base, but may be supplied minus these supports where direct attachment to machines is desired.

STOCKER & YALE, Dept. CP, Marblehead, Mass.

When inquiring specify CP 3493 — see handy form pages 2-3

DECEMBER, 1947



INDUSTRY PAYS an incalculable bill each year for its inability to garner all its dust. What is your individual share of that tab? How much money, in the form of real pay dust, are you blowing away? Does your present dust-collection system approach 100 per cent recovery? Even if it is as high as 99.5 per cent, what does the remaining 0.5 per cent mean in loss to you? Only 100 lb. a day means approximately 15 tons a year.

You alone can provide the answers.

But we can offer a suggestion as to how to reduce your losses to the irreducible minimum: The **MIKRO-COLLECTOR** will keep your dust out of the air and your

Profits in the Bag.

The **MIKRO-COLLECTOR** with its phenomenal ability to handle even those damp and hitherto baffling dust loads . . . its revolutionary principles, which assure a perpetually clean filter, marking the first radical change in the art of dust-collection in a quarter century . . . supplements our line of **MIKRO-PULVERIZERS** and **MIKRO-ATOMIZERS** in use throughout the world. But it performs with equal efficiency as an auxiliary to any type of grinding machinery, or in general air-clarification.

The value of the **MIKRO-COLLECTOR** in dollar-and-cents . . . its ability to amortize its cost quickly . . . lies in its 99.99 per cent minimum recovery of most solids even in the low micron ranges.

When you want **COMPLETE** recovery . . . whether of dry dust or dust containing a considerable percentage of water or oil . . . it will pay you to investigate the performance of this equipment. Write for your copy of the **MIKRO-COLLECTOR** Bulletin.

PULVERIZING MACHINERY COMPANY

60 Chatham Rd., Summit, N. J.

1325

When inquiring specify CP 3494 . . . see information request blank, pgs. 2-3

Steamaster Builds Boilers with

PLENTY OF GUTS!



The GUTS of the Steamaster Boiler

IF YOU
designed and built
your own boiler You'd
make sure it had
PLENTY OF GUTS.

**Water Tube
Design
Inclined Tubes
Sectional Steel
Headers
Longitudinal
Drum**

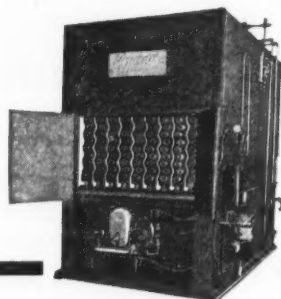
CHECK

the features you'd
include if you de-
signed your own
boiler

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Water Tube Design <input type="checkbox"/> Inclined Tubes <input type="checkbox"/> Sectional Steel Headers <input type="checkbox"/> Longitudinal Drum <input type="checkbox"/> All Steel Construction <input type="checkbox"/> Positive Tidal Circulation of Water — maintains all parts at equal temperature. <input type="checkbox"/> Condensate Return System Built-in as an integral part of all boilers of 60 h.p. and up. <input type="checkbox"/> Easy Inspection and Maintenance — every tube immediately accessible. Just open the heavily insulated access doors. <input type="checkbox"/> Large Combustion Area . . . Three-Pass Heat Baffling gives high thermal efficiency. | <ul style="list-style-type: none"> <input type="checkbox"/> Choice of Fuel — Gas, Oil or Coal or any combination of these fuels to meet fuel requirements of your plant. <input type="checkbox"/> Fully Equipped for Automatic Operation — with the finest accessories. As nearly automatic as a boiler can be. <input type="checkbox"/> A.S.M.E. CODE — National Board Approved. Inspected and certified by Hartford Steam Boiler Inspection and Insurance Co. <input type="checkbox"/> Full Range of Sizes from 10 h.p. to 300 h.p. as illustrated. The Model A for 3½ h.p., 5 h.p. and 7½ h.p. <input type="checkbox"/> Can be Fired Over Rated Capacity and still maintain high thermal efficiency. |
|---|--|

These Features

which you'd have in your own boiler design are built in all Steamaster Boilers from 10 horsepower to 300 horsepower. Fabricated entirely in our own factory.



Completely
Shop Assembled

Steamaster
AUTOMATIC BOILER CO.

5825 Compton Ave., Los Angeles 11, California

SALES AND SERVICE IN ALL PRINCIPAL CITIES

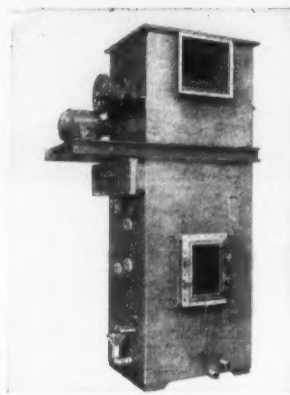
POWER ENGINEERS AGREE: Steamaster
is the boiler with plenty of Guts.

When inquiring specify CP 3495 — see handy form pages 2-3

Production Equipment

Spray-Type Air Conditioner Is for Lab or Industrial Precision

*Produces desired humidities and temperatures;
delivers 2000 to 20,000 cu. ft. of air per min.*



Type "A" air conditioner

USES — Improved, saturating spray-type air conditioners for producing the exact condition of relative humidity and temperature needed in a laboratory, manufacturing or processing space, or for impingement on a product, as in many continuous drying operations and where uniformity is of paramount importance.

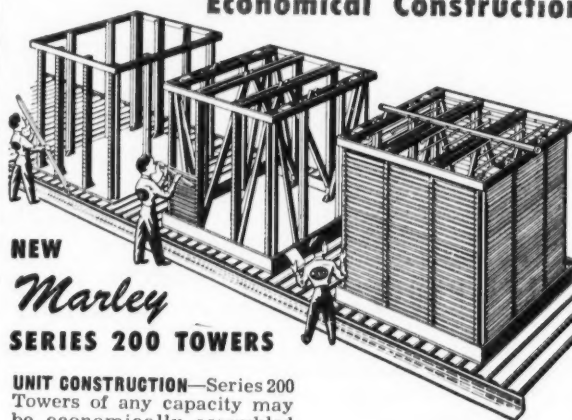
Applications include industries and laboratories handling hygroscopic materials in lines such as pharmaceutical chemical

and biological processes, instruments, cellophane, rayon, foods, paper, textiles, forest products, photographic film, drugs, etc.

Also for obtaining most efficient heat transfer between a liquid in a tube, and air, by evaporation.

FEATURES — Changes in design permit saturation of air

NOW THEY'RE Standardized for Volume Production Economical Construction



NEW Marley SERIES 200 TOWERS

UNIT CONSTRUCTION—Series 200 Towers of any capacity may be economically assembled from standard parts.

ADDED STRENGTH—Series 200 Towers are framed structurally complete before louver posts and louvers are added. Completely shop fabricated.

SPRACOIL COOLING—Series 200 Towers, without alteration, are adaptable for closed system cooling; utilize Marley Spracoils. Request Bulletin 200B-47

MARLEY PATENTED
SPRAY NOZZLES are
standard equipment
in all Marley At-
mospheric Towers.



THE MARLEY COMPANY, INC. • KANSAS CITY 15, KANSAS

When inquiring specify CP 3496 — see handy form pages 2-3

TO HELP YOU SELECT

The RIGHT cable for EVERY job

Bulletin GEA-4507



Describes G-E VARNISHED-CAMBRIA INTERLOCKED cable for overhead power distribution without conduit. Bronze armor resists chemical attack.

Bulletin GEA-1788



Features G-E CORONOL-GEOPRENE, a high-voltage cable for power distribution or motor leads in conduit. Resists heat, moisture and most chemicals.

HB-1240-P3



Covers G-E VERSATOL-GEOPRENE, a low-voltage cable for distribution and branch-circuit wiring. Resists heat, moisture and most chemicals.

Bulletin GEA-4352



Gives data on G-E FLAMENOL, a cable for control and motor leads. Can not be harmed by acids, alkali, grease and oil. Particularly suited to severe applications.

Write to Apparatus Dept., General Electric Company
Schenectady 5, N. Y.

GENERAL ELECTRIC

When inquiring specify CP 3497 — see handy form pages 2-3

SEND US A SAMPLE OF ANY STOCK YOU WANT TO PULVERIZE

SCHUTZ-O'NEILL offers you the benefit of more than a half century of experience in rapid, accurate, dustless pulverizing of any dry, grindable, non-gritty stock. Send us a sample of any stock you need to pulverize, stating fineness desired. We will make a test grind, and give you a report on the best method to use and the type of Schutz-O'Neill Pulverizer and any receiving or sifting equipment suited to your requirements. Acceptance of this offer for a test grind does not obligate you.

MILL PLANS FOR EVERY TYPE OF GRINDING

Schutz-O'Neill engineers, after they know your needs, can suggest a Mill Plan with the correct size and type of pulverizer, receiver box, expansion tubular collector or cyclone collector, gyrator sifter, etc.

Schutz-O'Neill Style "D" Pulverizer, for fine grinding of dry, non-gritty stocks. Made in 6 sizes with capacities up to 2000 lbs. per hr. Also Gyrator Sifter, Roller Mills, Receiver Boxes, Hammer mills.



SCHUTZ-O'NEILL CO.

303 SIXTH AVENUE SOUTH
MINNEAPOLIS 15, MINNESOTA

When inquiring specify CP 3498 — see handy form pages 2-3

Production Equipment

despite small amount of floor space which is occupied by the "Type A" machine. Gives dependable service despite corrosive surroundings, manufacturer reports.

DESCRIPTION — The saturating spray "Type A" air conditioner delivers 2000 cu. ft. of air per minute and occupies 7-1/2 sq. ft. of floor space. Other models requiring up to 50 sq. ft. deliver air up to 20,000 cu. ft. per min.

Type "A", illustrated, operates on principle of saturating air with moisture at a given desired dewpoint temperature and then, by re-heating, producing the desired conditions. It has a stainless steel casing, welded into an integral unit. Relative humidity and temperature may be held or varied at will between 40 and 125° F. dewpoint temperature, with close tolerance. Manufacturer states that a dry bulb variation of 1° F. might mean a variation of 4 or 5% in relative humidity. Lower temperatures are obtained by use of manufacturer's "No Frost" liquid in the spray solution.

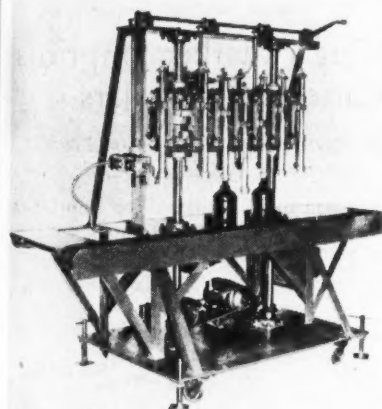
NIAGARA BLOWER COMPANY, Dept. CP, 405 Lexington Ave., New York 17, N. Y.

When inquiring specify CP 3499 — see handy form pages 2-3

★

Bottle-Neck Gauger Slashes \$30 per Day from Production Cost

Machine automatically handles 225 bottles per min.; makes possible easy, accurate filling



Bottle gauging machine

USES — Automatic machine for gauging bottle-neck sizes in order to facilitate filling operations.

FEATURES — Makes possible more accurate and easier filling of bottles. Lowers production costs. Greatly increases speed as compared to hand process.

DESCRIPTION — Designed, engineered and built for a large manufacturer of bottles, this machine automatically passes through the neck

opening of bottles and gauges size of the neck.

Manufacturer reports that, in a 7 months' test, machine remained in continuous operation 24 hrs. per day without a single breakdown, increasing bottle production 40% with negligible rejects.

Savings in production costs are reported to have amounted to \$30 per machine per day, the machine operating at a speed of 225 bottles per minute as compared to 60 bottles per minute per man by the hand process.

RUSSELL & THOMPSON MANUFACTURING COMPANY, Dept. CP, 507 Orange St., Newark 7, N. J.

When inquiring specify CP 3500 — see handy form pages 2-3

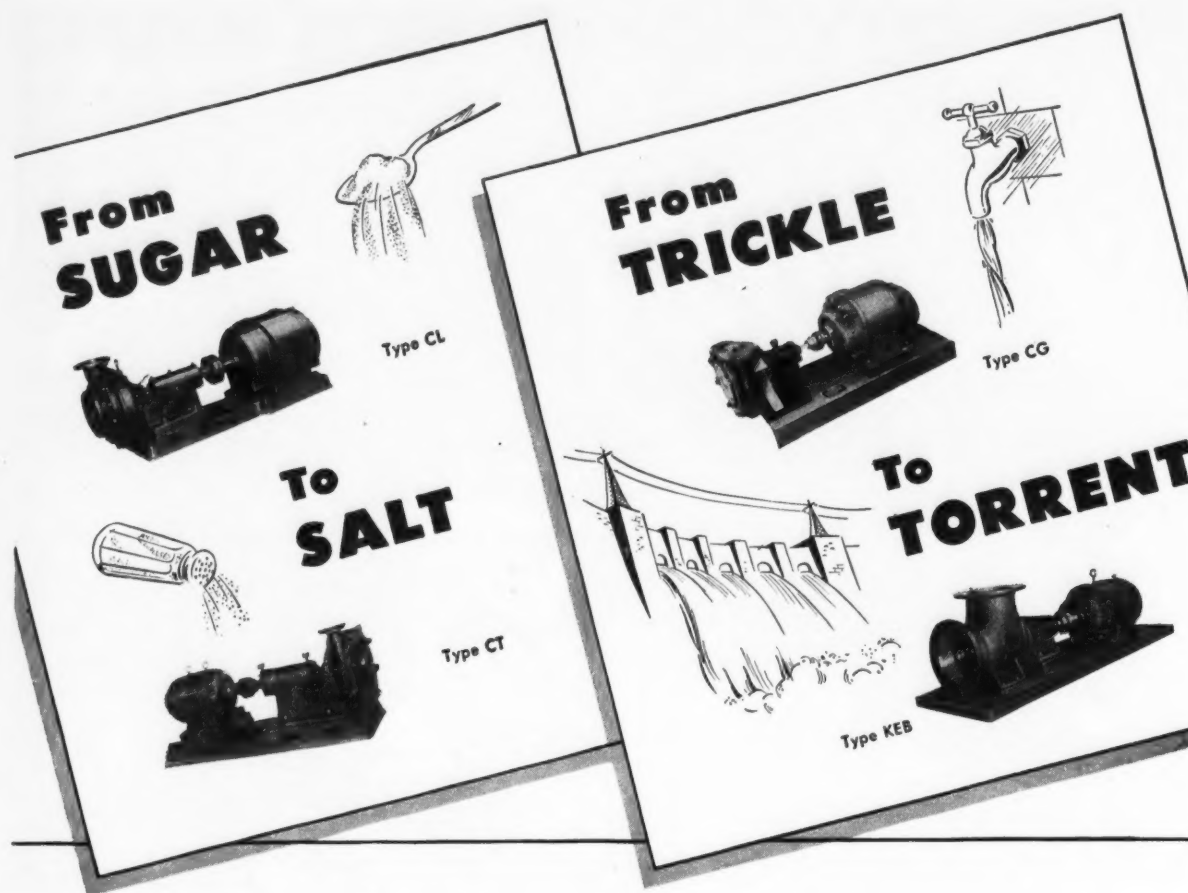
DECEMBER, 1947

Anti-Corrosive STEEL Fastenings

Twenty years — nearly the industrial lifetime of Stainless Steel — have taught us a lot about the fabrication of Stainless Steel Fastenings — the fastenings which, literally, hold together the Stainless Steel industry. Our experience and our facilities are at your service. Our stockroom is full of standard items in the most frequently required analyses, ready for shipment. Our skilled workmen, have the right machines to fill your order for non-standard items to your specifications, from our large raw material stockpile. Nuts, bolts, screws, cotter pins, rivets, washers, welded and seamless pipe — over 100 items, over 7,000 sizes. Write for our catalog and stock list — address Anti-Corrosive Metal Products, Co., Inc., 52 River Road, Castleton-on-Hudson, New York.

Anti-Corrosive Metal Products Co. Inc.
CASTLETON-ON-HUDSON NEW YORK

When inquiring specify CP 3501 . . . see information request blank, pgs. 2-3



Worthington Standard Centrifugal Pumps serve all processing industries

Whether your pumping problems involve corrosion, abrasion or contamination, or are strictly hydraulic, you'll find efficient, economical, ready-made answers in Worthington Centrifugal Pumps.

"Across the Board" in Chemicals

Worthington Worthite Pumps, for example, are something extra-special in stainless steel alloys. Developed to handle the widest range of pump-punishing liquids, they are equally resistant to corrosive, low pH sugar syrups and corrosive-abrasive brine slurries at the boiling point.

As for Capacities . . .

Worthington Centrifugal Pumps deliver from 5 to 18,000 gpm, smoothly and steadily at all usual heads and speeds. In short, to all industrial processing—from paper to plastics, from rayon to rubber—Worthington offers more pumps for

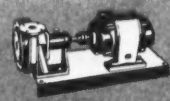
more jobs, plus the longest experience in the field. For details proving there's more worth in Worthington, contact our nearest District Office or Worthington Pump and Machinery Corporation, Centrifugal Pump Division, Harrison, N. J.



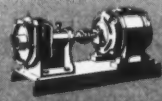
WORTHINGTON



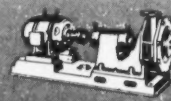
**THE
WORLD'S LARGEST
MANUFACTURER
OF PUMPS**



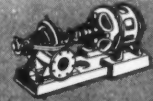
Types CG and CGL. Sizes ½" to 10". Capacities to 3000 GPM; heads to 200 ft. Liquid ends of WORTHITE alloy.



Type CF. Sizes 1" to 4". Capacities to 1000 GPM; heads to 130 ft. Standard, all iron and all bronze.



Type CQ. Sizes 1½" to 3". Capacities to 600 GPM; heads to 130 ft. at 1750 RPM. Closed impeller. WORTHITE shaft and fittings.



Type L. Sizes 3" to 8". Capacities to 2250 GPM; heads to 300 ft. Single stage vane. For general service.

C7-7

When inquiring specify CP 3502 . . . see information request blank, pgs. 2-3

Production Equipment

Rigid, Square Mesh Wire Cloth Used in Screening, Conveying

*Hot dip galvanized after weaving, it lays flat,
resists rust, and won't unravel when cut*

USES — Industrial wire cloth in various meshes and weights for rust-resistant or other purposes.

For certain screening processes, especially where mesh must be securely held together. For conveying and drying aprons, dehydrators, mixing and batching fertilizer screens, grain machinery, strainers and filters in water works, condenser cloth, etc. For machinery and window guards.

FEATURES — Thoroughly coated. Can be cut into small sections without unraveling or loss of squareness. Lays flat. Methods of construction assure closed intersections, fast screening.

DESCRIPTION — Screens are hot dip galvanized after weaving. Deep crimping holds mesh accurate. Made from full gauge selected steel wire, galvanized after weaving by best grade prime western zinc. Coating process is scientifically heat-controlled both for thickness and bond, also for flatness when screening is rolled out. "Points," or drippings, are avoided.

Available in light-medium, medium or medium-heavy grades, also a wide assortment of meshes, wire diameters, etc. Some of these are shown in Form 597.

BUFFALO WIRE WORKS COMPANY, Inc., Dept. CP, 419 Terrace, Buffalo 2, N. Y.

When inquiring specify CP 3503 — see handy form pages 2-3

★

Automatic Rotary Marker Imprints Small Cartons, Cans, Jars

*Attaches to packaging, processing, conveying
equipment; imprints 1 or 2-line legends*

USES — Small, automatic rotary markers for imprinting small cartons, boxes, cans, jars, and continuous rolls of paper and textiles as part of an existing production operation.



Automatic rotary marker

For imprinting either one or two-line legends in a continuous or repeated pattern on the top, side or bottom of containers. For packaging, processing, conveying, etc.

FEATURES—Quickly and efficiently imprints clean, sharp

CHEMICAL PROCESSING Preview

REX-BRACKET SUPPORT

FOR PLATEN PRESS STEAM LINES

REX-BRACKET Support units put the wear of continued opening and closing where it can be best absorbed without weakening the connector: along the arms of the Rex-Weld Flexible Metal Hose, instead of in the turn!

- Entire assembly no thicker than the coupling nut! Easy to "stack" assemblies on multiple-platen presses!
- Positive condensate drainage—even when hose connections are parallel!
- Lightweight—even in largest sizes.
- Write today for data on Rex-Bracket Support sizes, travel, and pressure ranges.

**FLEXING
ALONG THE ARMS,
INSTEAD
OF**

**IN
THE TURN,
FOR LONG,
DEPENDABLE
USE...**

Flexible Metal Hose for Every Industrial Use

CHICAGO METAL HOSE CORPORATION
MAYWOOD, ILLINOIS
Plants: Maywood and Elgin, Ill.

When inquiring specify CP 3504 — see handy form pages 2-3

Production Equipment

legends. Economical, requiring no outside power, no manual operation. Legend content and type sizes easily changed. Several different type faces and sizes may be combined in any one legend.

Ink may be obtained in any color for any specified surface. Installation of this equipment does not necessitate altering existing equipment. May be installed, from printed instructions, by user's own personnel.

DESCRIPTION — Two models — No. 301 for single-line imprinting and No. 302 for one or two-line imprinting — are similar to larger Rolacoder units.

Machine is attached to packaging, processing, conveying or other handling equipment in which objects to be marked are firmly positioned while moving along the line. Installation is in such manner that the die-wheel, which rotates on a spring-pivot arm, protrudes slightly into path of the moving objects, imparting its imprint during moving object's contact with type.

Die-wheel has cushioned type-base of interlocking construction. This engages type securely, yet permits ease of change. Eight sizes of type vary from 3/16 to 5/8" high. Type surface is inked automatically after each imprint. Ink fountain requires only infrequent filling.

Initial adjustments are by means of Allen wrenches, a set of which are supplied with each machine. Complete with ink supply and interchangeable rubber type. Rolacoder Jr. is constructed of precision-machined parts, sealed bearings and tough alloy castings. Product Data Sheet 6.0.

ADOLPH GOTTSCHO, INC., Dept. CP, 1 Hudson St., New York 13, N. Y.

When inquiring specify CP 3505 — see handy form pages 2-3

The refrigeration compressor is as important as the feedlot in the production of nicely marbled prime rib roasts for your Sunday dinner. After slaughtering, carcasses are rushed to chilling coolers for quick removal of body heat. Then the sides go to storage coolers where controlled temperatures and humidity prevent shrinkage, improve quality. After ageing, prime beef is shipped to distribution points in refrigerated trucks and railroad cars. Your neighborhood butcher stores his sides and quarters in a refrigerated cooler. You buy your prime rib roast from a refrigerated display case, and refrigerate it at home. One feedlot but many compressors are necessary to produce and deliver that juicy roast. Baker compressors guard the many production processes and delivery of prime beef from feedlot to tables all over the world.

Baker ICE MACHINE CO., Inc., South Windham, Me., and Omaha, Neb.

When inquiring specify CP 3506 . . . see information request blank, pgs. 2-3

REED Jacketed VALVES

JACKETED CAST IRON

Reed Jacketed Cast Iron Valves have jackets cast integral with the body and are furnished with flanged ends only. Flanges are the next nominal size larger than the valve size, that is: 1" valves have 2" end flanges, etc. All valves are F & D to A. S. A. standard dimensions.

Available only in sizes 1", 2", 3", 4" and 6", line working pressure 125 p. s. i. at 450° F. maximum.

JACKETED STEEL

Reed Jacketed Steel Valves have fabricated jackets and can be furnished in Standard Series 150 and Standard Series 300. Flanged valves can be furnished in size 1 1/2", 2", 3", 4" and 6", F & D to A. S. A. standard dimensions. Screwed valves in sizes 1 1/2", 2" and 3" only.

Deep stuffing boxes assure effective sealing, and wear on the packing is minimized, as the stem makes only a quarter-turn when the valve is operated.



JACKETED STEEL

Series — 150
Series — 300

JACKETED CAST IRON

Can be supplied with
BODY ONLY
JACKETED or
WITH BOTH BODY
AND BONNET
JACKETED

Reed
VALVE DIVISION
of the REED ROLLER BIT COMPANY

P. O. DRAWER 2119

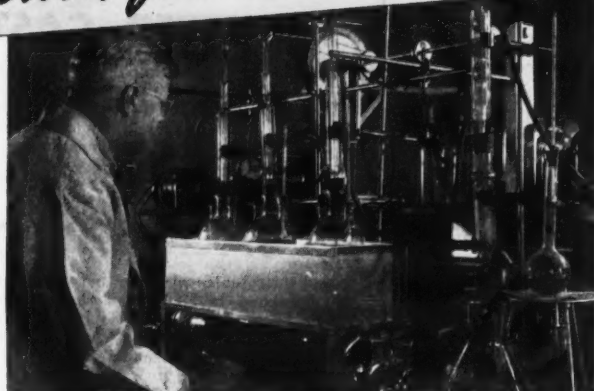
HOUSTON 1, TEXAS

When inquiring specify CP 3507 — see handy form pages 2-3

T.F.P.*

Protection for Chemicals

Laboratory at the Chicago plant where Steri-Seal Linings for many chemical products have been developed.



... WITH *Steri-Seal* LINED INLAND STEEL CONTAINERS

Lever locking ring drum—easy to open and reseal air tight.



Our laboratory has developed many interior coatings for steel containers that enable us to offer to the chemical industry a perfect container for many, difficult to pack, chemicals.

Our Steri-Seal lining laboratory is available to help you solve the problem of packaging your chemical products.

*Trouble Free Packaging

Lever locking ring pail—can be resealed, tight.



New Por-Pail lug cover with pouring spout—ideal for liquids.



No. 8 Lug cover pail.

INLAND STEEL CONTAINER CO.

Container Specialists

6532 SOUTH MENARD AVE., CHICAGO 38, ILLINOIS

PLANTS AT: CHICAGO—NEW ORLEANS—JERSEY CITY



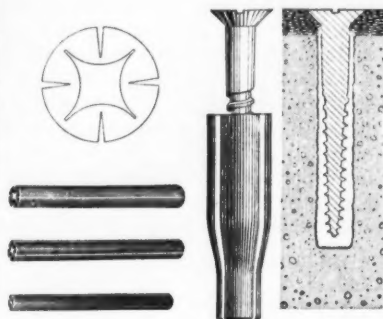
When inquiring specify CP 3508 — see handy form pages 2-3

Production Equipment

Plastic Screw Anchors Expand, Withstand 2,965-lb Load Pull

Take No. 5 to 20 wood, 1/4 and 5/16" lag screws; concrete "pull-out" tests break No. 20 screws

USES — Plastic expanding screw anchors for securely fastening wood or lag screws into concrete, brick, plaster, tile, marble, terra cotta, composition boards, slate, metal, bakelite, rubber, glass, stucco, wood, etc.



Screw anchors easily cut to size

FEATURES — Easily cut to required lengths with cutting pliers, knife or saw. In "pull-out" tests at Pittsburgh Testing Laboratory, No. 20 screws are said to have broken, in several cases, while endeavoring to pull them out of concrete with maximum load pull of 2,965 lbs.*

This great holding power is said to permit use of smaller screws. Holes are small, neat, quickly drilled, using no special tools. The plastic used is unaffected by moisture, water, weather or acids; will not rot.

DESCRIPTION — Constructed with overlapping external and internal slits for "concertina" expansion, anchors are slightly larger in diameter than hole size. With 5000 psi impact and tensile strength, they can be driven in. Withstand temperatures to 78° below zero and up to 180° F. Available in 7 sizes and in lengths to accommodate all screw sizes from No. 5 to 20, or 1/4 and 5/16" lag screws.

Packed in cartons of 100. Also packed in two sizes of transparent sectional plastic kits containing assortments of all sizes.

HOLUB INDUSTRIES, Inc., Dept. CP, Sycamore, Ill.

When inquiring specify CP 3509 — see handy form pages 2-3

Here is the pair for clean, dry air . .

JOHNSON AFTERCOOLER

Used where moisture is vaporized by the heat of compression. Circulates cooling water around the line, condenses the oil and water vapor so Separator can remove them. Simple in design, highly efficient in performance.

SIZES
FOR ALL
NEEDS

**JOHNSON
SEPARATOR**
Removes more than 99% of all water, dirt and oil from compressed air or steam. Combines the two best principles of separation—first allows air to expand slightly, then changes flow direction with the "Thousand Baffles". Model illustrated is the newest idea in separator design, with self-draining trap mechanism built right in.

WRITE FOR
BULLETIN

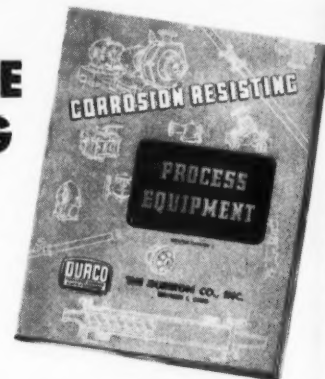


The Johnson Corporation

826 Wood St., Three Rivers, Michigan

When inquiring specify CP 3510 — see handy form pages 2-3

Here's a COMPLETE CATALOG of Corrosive- Handling Equipment



New, 8-page,
Duriron Company
catalog
describes: — — —

36 TYPES OF EQUIPMENT —
Pumps, pipe, valves, fans, heat exchangers, etc., made of Durco corrosion-resisting alloys.

DURCO CORROSION RESISTING ALLOYS —
Duriron, Durichlor, Durimet, Chlorimet, and Durco D-10, stating composition and physical and mechanical characteristics.

FEATURES of each type of equipment, **SIZES, CAPACITIES** and the **ALLOYS** in which it is available.

Write for your free copy today.
Ask for General Catalog J.

DURCO Adv. 54-GM



THE DURIRON CO., INC.

DAYTON 1, OHIO

Branch Offices in Principal Cities

When inquiring specify CP 3511 — see handy form pages 2-3

CHEMICAL PROCESSING Preview



BLAW-KNOX Aquatonic FOG NOZZLES DO NOT FAIL!

Wide clear passages through the heart of this dependable Fog Nozzle makes it virtually non-clogging—always reliable.

It fights fire with the water available—maintains its fog pattern under low pressures in emergency.

Fine but forceful fog gives maximum cooling and quenching effect and drives to the base of the fire in spite of drafts and turbulence.



Also—

Blaw-Knox offers Standard Wet and Dry Pipe Systems, as well as Thermostatically Controlled Pre-Action and Deluge Systems.

Write for details.

BLAW-KNOX SPRINKLER DIVISION

831 Beaver Avenue, N.S.,
Pittsburgh 12, Penna.

When inquiring specify CP 3512
— see handy form pages 2-3

Production Equipment

Dry Chemical Extinguisher Is Light, Easily Recharged

Practical for burning liquids, solids, gases,



Dry chemical fire
extinguisher

USES — Dry chemical fire extinguisher for flammable liquids, gases, solids and electrical equipment. Also for controlling fire in ordinary combustibles.

FEATURES — Designed for effective use, even by inexperienced operators. Simplified maintenance includes quick on-the-spot recharging, after use.

Extinguishing agent used is said to be non-toxic, non-corrosive, non-abrasive and a non-conductor of electricity. Lightweight.

DESCRIPTION — Unit is 19-1/8" long and 3-1/2" in diameter. Four-pound model Ansul 4. Uses Ansul Plus-Fifty Dry Chemical. Supplied with quick-opening bracket for vertical or horizontal mounting in locations where space is limited.

Descriptive literature covers this fire extinguisher in detail.

ANSUL CHEMICAL COMPANY, Fire Extinguisher Division,
Dept. CP, Marinette, Wis.

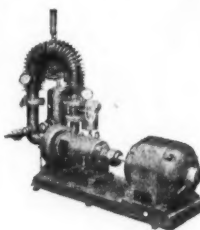
When inquiring specify CP 3513 — see handy form pages 2-3

2-FOLD BENEFITS

- 1. **Speed Increased 44%
and Drum Dressing Cut**
- 2. **Boiler Capacity Increased
and Fuel Costs Cut**

"Our benefits were two-fold. Drying speed on the 4-drum driers was increased 44% with no wet spots — time between drum "dressings" extended from three days to three weeks . . . Boiler capacity was increased with fuel saving up to \$200.00 per month."

The above letter, typical of hundreds of unsolicited letters from enthusiastic plant executives, where the Cochrane C-B System of High Pressure Condensate Return is used, only mentions two benefits. Actually, benefits from the Cochrane C-B System are five-fold: INCREASES PRODUCTION . . . LOWERS FUEL COST . . . SAVES LABOR . . . IMPROVES QUALITY AND UNIFORMITY OF PRODUCT. This system drains the condensate from the process equipment and returns it to the boilers at practically the same pressure and temperature as when it left.



Write for a copy of Publication 3250

COCHRANE CORPORATION
3162 N. 17th St., Phila. 32, Pa.

COCHRANE CONDENSATE C-B BOOSTER SYSTEM

OF HIGH PRESSURE, HIGH TEMPERATURE CONDENSATE RETURN

When inquiring specify CP 3514 — see handy form pages 2-3



You have a choice of

- ✓ BRASS
- ✓ MONEL
- ✓ INCONEL
- ✓ NICKEL-CLAD STEEL
- ✓ STAINLESS STEEL

Regardless of the nature of the gas or liquid to be handled, you can choose a TITEFLEX all-metal flexible tubing of the required corrosion resistance. For TITEFLEX tubing is furnished with innercore made of brass, monel, inconel, nickel-clad, or stainless steel to assure satisfactory performance over a wide temperature range and under practically all conditions where corrosion is encountered. TITEFLEX also offers a wide choice of materials for braiding and fittings.

Remember, too, that TITEFLEX is constructed entirely of metal—with no packing to wear away or disintegrate. Play safe, specify TITEFLEX ALL-METAL flexible tubing for replacements and for new installations.

Competent engineering service is available at all times to help you with your tubing problems.

Write for information.

Titeflex, Inc. 600 Frelinghuysen Ave., Newark 5, N. J.

Exclusive Manufacturers of Titeflex high
quality products for more than 30 years

Sales Offices { CHICAGO CLEVELAND DETROIT PHILADELPHIA
LOS ANGELES BOSTON SAN FRANCISCO TORONTO

When inquiring specify CP 3515 — see handy form pages 2-3

INTER-BATCH UNIFORMITY

... a vital step in manufacturing NYLONS

Leg-flattering, sheer nylon hosiery from thermoplastic chips . . . a manufacture requiring an infallible, uniformly mixed product. Towering 360 cu. ft. Sprout-Waldron mixers fulfill this exacting need by continuously blending individual mixes into one homogeneous stock.



From glue flakes to organic dyestuffs, Sprout-Waldron vertical blenders are proving today their outstanding efficiency and versatility in widely diversified industries. Sizes range from 10 to 375 cu. ft. Construction features and materials vary also with installation requirements . . . from stainless steel to plexiglass.

If you mix one material with another . . . reduce its size . . . separate one particle size from another . . . or handle material in bulk, you may realize considerable savings by consulting Sprout-Waldron. Our valuable ADAPTIONEERING service — ingenuity + machines + experience — is at your command. Sprout-Waldron & Company, Muncy, Pennsylvania.

WHY

Sprout-Waldron vertical mixers are OUTSTANDING:

- Exceptionally low power consumption
- Use as inter-batch reservoir-mixer
- Minimum floor space requirements
- Economy — a battery of S-W verticals can act as reserves for separate formulas . . . eliminating cross contamination and the necessity for cleaning.

SPROUT WALDRON
Manufacturing Engineers

When inquiring specify CP 3516 . . . see information request blank, pgs. 2-3

Production Equipment

Cast-Steel Thermostatic Traps Defy Corrosive Condensates

Operate at 300 psi, or with superheat; helical bellows is only working part

USES — Cast-steel thermostatic steam traps for withstanding shock of external explosions such as occur in chemical plants and oil refineries.

For handling corrosive condensate. For operating with pressures to 300 psi, or with superheat. Also specially designed for maximum operating pressures to 225 psi saturated steam.

FEATURES — Save costly replacements. Rapid heating from a cold start. No seats to change for pressure changes or fluctuations. Only one working part, the flexible bellows. No floats or buckets. No narrow passageways.

No protection required against freezing when installed to discharge to atmosphere.

DESCRIPTION — Cast-steel body and cap. Stainless steel thermostatic element is a special helical bellows which permits spacious orifice and great air venting capacity. Differential between pressure created in bellows and the steam pressure remains practically constant.

For maximum operating pressures to 225 psi saturated steam, one of this series has a bronze thermostatic element. Bulletin P.R. 1176 contains capacities, diagrams, etc.

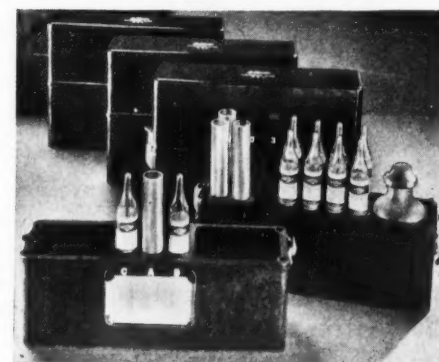
SARCO COMPANY, INC., Dept. CP, 475 Fifth Ave., New York 17, N. Y.

When inquiring specify CP 3517 — see handy form pages 2-3

★

Non-Corrosive Block Comparator Has Improved Color Fields

Redesigned model, in plastic case, has observation slots tapered toward light source



Block comparator

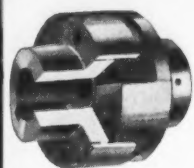
USES — Redesigned block comparator for use in many fields, including pH, chlorine and phosphate control.

FEATURES — Improved color fields. Plastic case is non-corrodible, resistant to excessive moisture, and withstands hard usage.

Designed for interchangeability with many standard

CHEMICAL PROCESSING Preview

Coupling Cushion Materials to Resist Chemicals, Oils, Heat, etc.:



Type "C"
Pat. & Pats. Pend.

LOVEJOY L-R Flexible Couplings

**Suited to
Load Conditions**

Because load cushions or spiders of Lovejoy L-R Flexible Couplings are made of materials to meet the exact need of every job in the chemical industries, they cut costs, paying for themselves many times over.

Lovejoy L-R Cushion materials are made of either rubber, leather, felt, rubber duck, or brake lining material as needed. Molded Neoprene spiders are available for couplings subjected to the deteriorating effects of chemicals, oils, heat, aging, etc.

WRITE FOR CATALOG AND SELECTOR CHARTS.

LOVEJOY FLEXIBLE COUPLING COMPANY

Also Mfrs. of Lovejoy-IDEAL Variable Speed Transmissions

5072 W. LAKE STREET

CHICAGO 44, ILL.

When inquiring specify CP 3518 — see handy form pages 2-3

**IF THESE OR SIMILAR LIQUIDS
ARE HANDLED IN YOUR PLANT**

Investigate BLACKMER ROTARY PUMPS

**Write for Bulletin 307—
FACTS ABOUT ROTARY
PUMPS**

which explains why the "Bucket Design" (swinging vane principle) automatically compensates for wear and how the buckets, when finally worn out, are easily replaced and the pump restored to its normal capacity.

Acids
Alcohols
Asphalt
Beer
Butane
Dyes
Fuel Oil
Gasoline
Glue
Mash
Mayonnaise
Molasses
Oils
Paints
Rosin
Soaps
Soups
Syrups
Tar
Tomatoes
Yeast

BLACKMER PUMP COMPANY

1840 Century Avenue

Grand Rapids 9, Michigan

POWER PUMPS - HAND PUMPS - EZY-KLEEN STRAINERS -

When inquiring specify CP 3519 — see handy form pages 2-3

DECEMBER, 1947

Production Equipment

LaMotte procedures. Accommodates all LaMotte color standards of regular size (15 mm), new or old.

DESCRIPTION — Completely redesigned for its plastic body, with reduced size. Sharper color fields are said to result from the manner in which the observation slots iron, IPS sizes 1/2 to 6". Larger sizes will be available. screwed and flanged types, bronze aluminum and grey are tapered toward the source of light. Descriptive literature is available.

LaMOTTE CHEMICAL PRODUCTS COMPANY, Dept. CP, Towson 4, Baltimore, Md.

When inquiring specify CP 3520 — see handy form pages 2-3

★

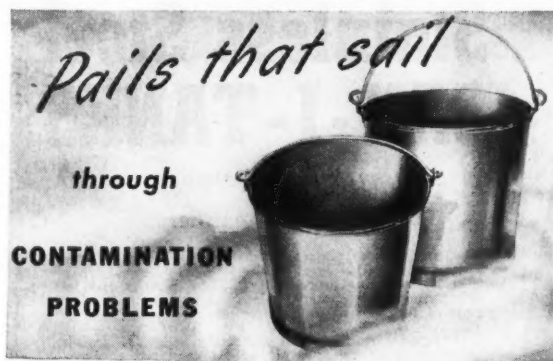
Shows Applications, Engineering Data for Gear Reducers of 1/2 to 1000 hp

A 68-page catalog covers herringbone gear units for speed reducing and increasing services in sizes from 1/2 to 1000 hp. These enclosed units are described as particularly adaptable for use with high speed induction motors. Also for use with steam turbines, gas or diesel engines, electric motors.

Engineering information includes reducer selection data and examples of proper application; dimensions and hp ratings; lubrication data; tables of maximum allowable pull on high or low speed shafts. There are 13 pages of installation photographs. Book No. 1819.

LINK-BELT COMPANY, Dept. CP, 307 N. Michigan Ave., Chicago 1, Ill.

When inquiring specify CP 3521 — see handy form pages 2-3



Protect sensitive food products with Inconel® pails.

They stay bright and sanitary. They stay smooth and sturdy. They're easy to clean, easy to keep clean.

For Inconel was originally developed to resist tarnishing and corrosion by foods — particularly dairy products. It handles not only brines, milk, fruit juices and vegetable acids, but stronger acids, alkalies and organic chemicals as well.

Because Inconel pails are constructed of strong, tough, solid metal, they needn't be pampered. They have no coating to chip off, crack or wear away.

All-welded Inconel pails are made by the ALLCRAFT MANUFACTURING COMPANY, INC. in 12-, 14-, 16- and 20-quart sizes.

*Reg. U. S. Pat. Off.

Available coast-to-coast.

Write us for name of nearest distributor.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.



INCONEL...PROTECTS PRODUCT PURITY

When inquiring specify CP 3522 — see handy form pages 2-3

for • **SPRAYING**
• **WASHING**
• **RINSING**
• **COOLING**
• **AIR CONDITIONING**

YARWAY SPRAY NOZZLES



Get the most out of your Spraying Equipment with minimum power... with efficient spraying.

Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow. Two types—Yarway Involute-type producing a fine hollow spray with minimum energy loss, and Yarway Fan-type producing a flat fan-shaped spray with time-saving slicing action for cleaning.

Wide range of standard sizes and capacities. Cast or machined from solid bar stock.

Thousands in use. Write for new Bulletin N-616.

YARNALL-WARING COMPANY
125 Mermaid Avenue Philadelphia 18, Pa.

When inquiring specify CP 3523 — see handy form pages 2-3

NEW Buckeye Portable Filter Press

COMPACT... LIGHTWEIGHT

This unit, weighing just 70 pounds, has overall dimensions of only 18"x14"x8½".

DOUBLE FILTRATION

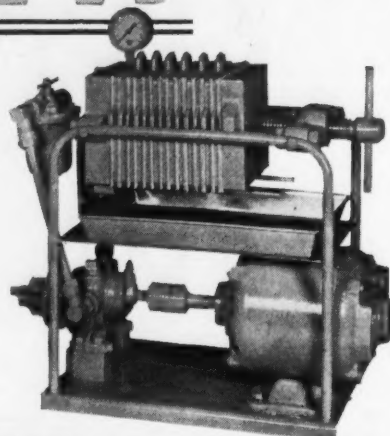
Both Pre-Filter and Filter Press assure complete dirt removal.

HIGH FLOW RATE

A ½-hp, 110-volt, 60-cycle motor drives the high efficiency pump... built-in relief valve maintains fluid pressure below 60 pounds P.S.I. This unit completely cleans 60 gallons of fluid every hour. (Based on fluid with a viscosity of 125 SSU at 70° F.)

LOW COST...IMMEDIATE DELIVERY. Priced at \$295.00, your Buckeye Portable Filter Press, with aluminum plates and frames, is ready for shipment now!

FOR MORE INFORMATION on this and other Buckeye Liquid Processing equipment, write to:



Production Equipment

Open-End V-Belting Offered in 450-550' Reels

*May be spliced with fasteners
for endless transmission uses*

USES — Open-end V-belting, available by the foot or yard for emergency use and special adaptation. Can be formed to proper size for use as endless transmission belts with aid of special fasteners.

Applications include air-conditioning equipment, air compressors, line shafts and other drives where it is difficult or impossible to use endless belts.

DESCRIPTION — In reels of 450 to 550-foot length, with standard top-widths of 21/32, 7/8 and 1-¼". Belt carcass comprises multiple layers of heavy, cross-woven fabric, designed for high power capacity and fastener-holding security. Fasteners for splicing open ends are installed with specially-designed tools.

GOODYEAR TIRE & RUBBER COMPANY, Mechanical Goods Division, Dept. CP, Akron, O.

When inquiring specify CP 3525
— see handy form pages 2-3



BUCKEYE LABORATORIES CORP.

6708 Morgan Avenue • Cleveland 4, Ohio

When inquiring specify CP 3524 — see handy form pages 2-3

Stainless Steel SAN-I-TANKS

*will simplify your storage and
processing operations*

Save time, money, increase efficiency — it's easy with San-I-Tanks. The ideal tank for ANY liquid that must be stored or processed. A San-I-Tank is easy to clean, completely sanitary, safe in operation and is engineered for years of trouble free service.

Many special features built right into San-I-Tanks such as self-draining bottoms, all welded construction, highly polished inside and out — and you get all these features at no extra cost. It's easy to see why San-I-Tanks lead the field.

**SPECIAL ENGINEERING SERVICE
for Your Tank Problems - -**

Do you have a tank problem that needs solving? Why not put it up to our engineers. In many cases we can show you how the proper tank installation will save you time and money. There is no obligation for this service, and we can follow through and produce the tanks in our own plant. This means additional savings for you.

**WRITE FOR COMPLETE TANK CATALOG
ILLUSTRATING OUR ENTIRE LINE**

420 Lexington Ave.
New York City 17, N.Y.
140 Walker St.
Atlanta, Georgia

605 Washington Blvd.
Chicago 6, Illinois
175 Thirteenth St.
San Francisco 3, Calif.
3236 Union Pacific Ave., Los Angeles 23, Calif.

METAL-GLASS PRODUCTS CO.
BELDING Dept. CP MICHIGAN

- BUILT OF 18-8 STAINLESS STEEL
- ALL-WELDED CONSTRUCTION
- RUST-PROOF and ACID RESISTING
- MANY STOCK SIZES

When inquiring specify CP 3526 . . . see information request blank, pgs. 2-3

PIPE INTERSECTION COMPASS



This Compass is a layout tool used for accurately marking the lines of intersection of two pipes (of the same or different diameters) which are to be connected to each other in the form of a right angle, other angles, "y", etc.

With this simple compass the average worker can quickly learn to do expert layout work such as is required in oil fields, refineries, chemical plants, etc. Its cost is quickly recovered thru the saving in time as well as saving in materials over old cut-and-try method.

COMPASS complete with chain and 6 soapstone crayons \$32.50 F.O.B. Cleveland, Ohio.

Write for new Catalog No. 26 which covers these and many other items of production and maintenance electrical equipment.

MARTINDALE ELECTRIC CO.

1358 HIRD AVE.

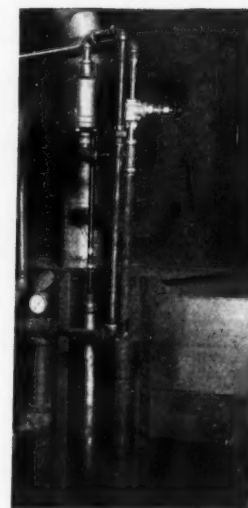
CLEVELAND 7, OHIO

When inquiring specify CP 3527 — see handy form pages 2-3



**"Riddy" Promises 92%
Contamination
Removal From Air Lines**

Remove 92% or more of all water, dirt, and oil in your compressed air lines with an Aridifier. Installations—as many as 476 in a single plant—are proving this figure daily. Here is an Aridifier in a forge shop keeping blast sand "desert-dry" for abrasive cleaning equipment. Write for bulletin.



Logan Engineering Company
4900 Lawrence Avenue, Chicago 30, Illinois

Logan ARIDIFIER
Dries and Cleans Compressed Air

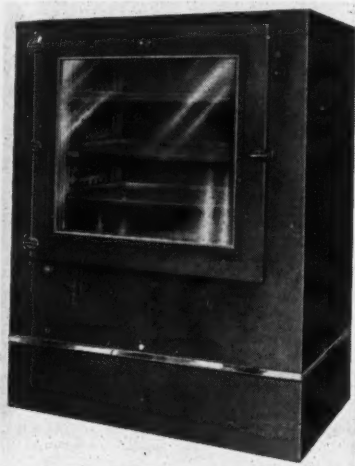


When inquiring specify CP 3528 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

Mechanical Convected Drier-Oven Has Built-In Full-View Window

*Uniform, automatic temperatures, empty or full,
aid aging, baking, dehydrating, sterilizing*



Mechanical convection drying oven

USES — Mechanical convected drying ovens for uniform, automatic temperature control. For treating substances in powder, solid or liquid form; also for aging, baking, dehydrating or sterilizing products requiring uniformity of heat.

FEATURES — Provides the advantages of full visibility without opening the door or disturbing

ing temperature of working chamber.

Also provides uniform, automatic temperature over the entire range, whether oven is empty or fully loaded. Uses a minimum of floor space.

DESCRIPTION — Available in three sizes of 3 to 9 cubic feet and two heat ranges of 180 and 260° C. All units have a large, built-in, heat-resisting full-view window. Panes can be removed in case of breakage, and no inner door is necessary.

Mechanical convection rapidly conveys large quantities of heated air across working chamber of oven. Air volume, air circulation and heat intensity are accurately controlled. Mercury angle-type thermometer is built into front of cabinet for convenient reading of chamber temperature.

Working chamber is located at convenient height, approximately 35" from the floor on all models. All mechanical and electrical equipment is located under chamber floor. Shipped ready for immediate operation, the oven requires only the usual electrical connections to power line.

THE ELECTRIC HOTPACK COMPANY, INC., Dept. CP, 5033 Cottman Ave., Philadelphia 35, Penna.

When inquiring specify CP 3529 — see handy form pages 2-3

★

Describes Flexible Infra-Red Spectrograph

A flexible infra-red spectrograph that combines desirable features of many instruments with all-electric control for development of analytical methods applicable to a wide range of investigations is described in a paper authored by Robert A. Oetjen, former associate of Dr. Louis C. Roess, supervisor of the department of physics at the manufacturer's Beacon laboratories.

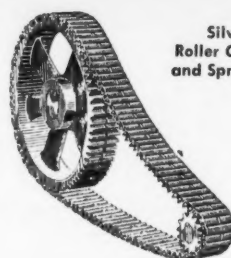
THE TEXAS COMPANY, Dept. CP, 135 E. 42nd St., New York, N. Y.

When inquiring specify CP 3530 — see handy form pages 2-3

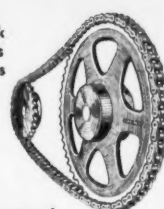
DECEMBER, 1947

POWER TRANSMISSION MACHINERY

by **LINK-BELT**
*Serves All
Industry*



Silverlink
Roller Chains
and Sprockets



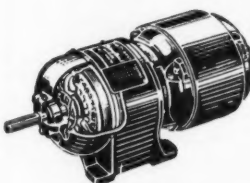
Silverstreak
Silent Chain
Drives



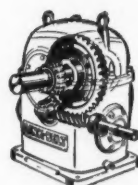
Steel, Malleable
and
Promal Chain Drives



V-Belt Drives



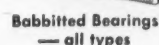
Electrofluid
Drives



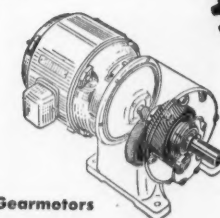
Herringbone Gear
Speed Reducers



Worm Gear
Speed Reducers



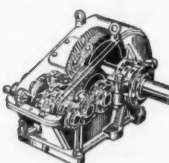
Babbitted Bearings
— all types



Gearmotors



P.I.V.
Gear Speed
Variators



LINK-BELT BALL AND ROLLER BEARINGS

ASSURE SERVICE SATISFACTION

Engineering principles and manufacturing methods of Link-Belt Ball and Roller Bearings are all pointed to the one objective: the assurance of "service satisfaction" to the user. They have many outstanding features which are making major contributions to that objective. Link-Belt bearings can be furnished in pillow blocks, cartridge, flanged, take-ups, hanger and duplex units or without mountings for machine applications, etc.

LINK-BELT COMPANY

THE LEADING MANUFACTURER OF CONVEYING AND MECHANICAL POWER TRANSMISSION MACHINERY
Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors in Principal Cities. 10-812-A



LINK-BELT

*Power Transmission
Machinery*

When inquiring specify CP 3531 . . . see information request blank, pgs. 2-3

Dependable Flow Control

with

DAVIS FLOAT VALVES



THE DAVIS NO. 60
FLOAT VALVE

WHERE top speed plant operation is vital don't forget the commonplace pieces of equipment which must operate dependably in order to insure the highest efficiency in every plant department.

For Float Valve dependability, the Davis No. 60 is unexcelled. Here are a few of its outstanding features:

1. The Famous Davis Single-Seat, Pilot-Stem Valve! Tight-closing and non-sticking. Standard sizes will open against any pressure up to 125 lbs.
2. No internal packing! Disc renewable easily and economically. Hot or cold liquid at high or low pressure handled without hunting or water hammer.
3. Sizes 3" and smaller are all-brass valves. Larger sizes have semi-steel body, bronze bonnet, piston and trim. Globe or angle body patterns.

DAVIS REGULATOR CO., 2562 S. Washtenaw Ave., Chicago, Ill.



DAVIS REGULATOR
COMPANY

When inquiring specify CP 3532 — see handy form pages 2-3

Now you can STANDARDIZE

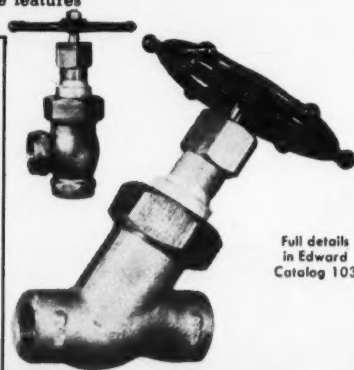
WITH THIS NEW EDWARD

STEEL STOP VALVE!

For the majority of services where forged steel stop valves are required you can standardize on these Edward designs. Lower pressure loss, oversize handwheels for easy operation, bonized seats and disks in mated pairs for drop tight closure, and EValved bonnets are but a few of the features of these valves.

A WIDE SELECTION

- ... Types
O, S, & Y, or Inside Screw
Globe or Angle
- ... Seats and Disks
EValloy Stainless steel or
Stellite hard faced
- ... Ease of Installation
Screwed or Socket Weld-
ing Ends
- ... Low Pressure Loss
Edward streamlined flow
- ... Full Range of Sizes
1/4 in. to 2 in. both Globe
and Angle
- ... ASA Working Pres-
sure Ratings
600 lb sp at 850 F Series
1300 lb sp at 850 F Series
Hydraulic Service up to
3600 lb at 100 F



Full details
in Edward
Catalog 103

Edward Valves, Inc.
SUBSIDIARY OF ROCKWELL MANUFACTURING COMPANY
EAST CHICAGO, INDIANA

When inquiring specify CP 3533 — see handy form pages 2-3

Production Equipment

Matting Cushions Feet, Checks Ground Shock

1/4"-high rubber cones elevate user from damp floors



Rubber safety mat

Cushions the feet. Self-cleaning construction. Non-marking, non-skidding. Long wearing.

DESCRIPTION — Consists of more than 2000 quarter-inch-high rubber cones which cover both sides of mat. Mat is 21-1/4" square, 11/16" thick (overall), with center layer thickness of 3/16".

To clean, drop to pavement, turn over, and replace in original position.

AVENUE MANUFACTURING and SALES COMPANY, Dept. CP, 1835 N. Milwaukee Ave., Chicago 11, Ill.

When inquiring specify CP 3534 — see handy form pages 2-3

USES — Rubber mat designed for use where persons stand on their feet for long periods. Also for elevation from damp floors, and to prevent electrical ground shocks.

FEATURES

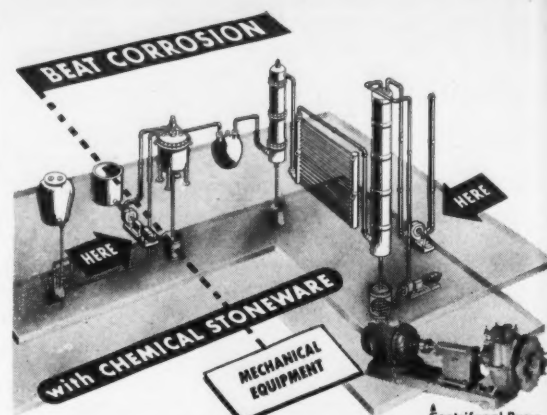
Non-marking, non-skidding. Long wearing.

DESCRIPTION — Consists of more than 2000 quarter-inch-high rubber cones which cover both sides of mat. Mat is 21-1/4" square, 11/16" thick (overall), with center layer thickness of 3/16".

To clean, drop to pavement, turn over, and replace in original position.

AVENUE MANUFACTURING and SALES COMPANY, Dept. CP, 1835 N. Milwaukee Ave., Chicago 11, Ill.

When inquiring specify CP 3534 — see handy form pages 2-3



Pumps and exhausters are the traffic cops of chemical plants. They direct the flow of liquids and gases, keep them moving at a uniform rate. And like all traffic cops, they must be dependable.

Dependability eliminates costly equipment shut-downs — and that's one outstanding advantage of pumps and exhausters made of General Ceramics Chemical Stoneware. It is absolutely corrosion-proof against all acids except hydrofluoric. It has high mechanical strength, high resistance to thermal shock and assures permanent, trouble-free installations.

General Ceramics Chemical Stoneware exhausters perform several important jobs. They produce an artificial draft for the movement of acid gases, accelerate chemical reactions and provide efficient ventilation.

All parts of General Ceramics centrifugal pumps and exhausters in contact with liquids or gases are made of chemical stoneware. Exposed parts are protected by metal shrouds. Both belt-driven and direct-driven models are available.

Write for Bulletin 211 on Stoneware Pumps—Bulletin RA on Stoneware Exhausters. Or if you have a specific problem, send details and we will give you our recommendations.



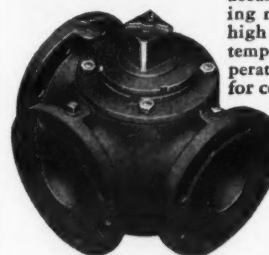
GENERAL CERAMICS and Stonite Corp.
Chemical Equipment Division • Kearsy, New Jersey

When inquiring specify CP 3536 — see handy form pages 2-3

Jacketed Pipe and Fittings



Jacketed 90° Elbow

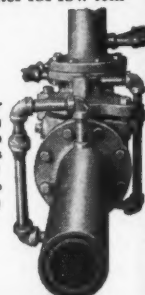


Jacketed 3-way Plug Cock.
Note threaded plug ad-
justment, with lock nut.

FOR MAINTAINING
UNIFORM TEMPERATURE (HOT
OR COLD) IN PROCESS PIPES

Wherever processing operations require the maintenance of uniform temperature (hot or cold) in the process pipes, a Hetherington & Berner Jacketed Pipe System will meet every requirement of accurate, economical processing. Heating medium may be either hot oil for high temperatures, steam for medium temperatures, or hot water for low temperatures. Cold water for cooling.

At right: Jump-over
pipes prevent heating
(or cooling) medium
from entering process
pipe in transferring it
from jacketed line to
fittings, or from fitting
to fitting.



Write for Bulletin S-44



HETHERINGTON & BERNER INC.

711 KENTUCKY AVE., • INDIANAPOLIS 7, INDIANA

When inquiring specify CP 3537 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

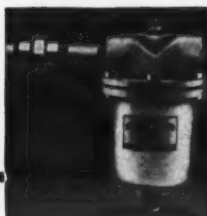


FITTINGS ARE SCARCE save 7 per trap with SUPER-SILVERTOPS

Let's be miserly with pipe fittings—and save 7 per trap by standardizing on Super-Silver-top Steam Traps, rugged, long-life, trouble-free inverted bucket steam traps that give an added bonus of simplified piping.

Want dependable trapping, with simplified piping throughout the size range? Investigate Super-Silvertops. Described in book, "How To Choose a Steam Trap." Free copy sent on request.

THE V. D. ANDERSON COMPANY
1954 West 96th Street • Cleveland 2, Ohio



Super-Silvertop showing one
nipple and one union needed.



Conventional trap using seven
fittings and two unions.

When inquiring specify CP 3535 — see handy form pages 2-3

Production Equipment

Code-Marks Labels Thermostatically

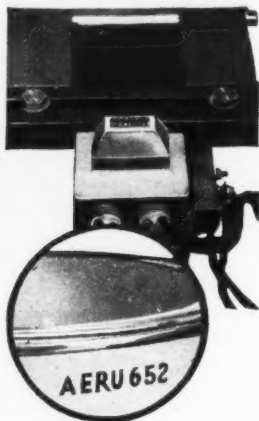
*Scorches legible 8-letter code
despite labeling speeds*

USES — Unit for code-marking labels during their application to round metal or glass containers.

For operation with all standard horizontal-type labeling machines.

FEATURES — Labels can be code-marked at whatever speed labeling machine is being operated. Will not obstruct working operation of any other part of labeling machine.

DESCRIPTION — Legible code mark is applied by "scorching-in" process, with heat concentrated in the type. Equipped with 115 or



Code-marker

230-volt AC-DC heating elements. Thermostatically controlled for 5° F. variable in each direction.

Light or heavy impressions obtained as desired by heat control. Standard unit holds up to 8 pieces of 3/32 or 1/8" type, which can be furnished. Special units accommodate more type. Frame is equipped with stop, permitting replacement in perfect register after each type change.

Location of mark on label is fixed after unit is placed in position. Bulletin A-3.

JAS. H. MATTHEWS & COMPANY,
Dept. CP, 3970 Forbes St., Pittsburgh 13,
Penna.

When inquiring specify CP 3538
— see handy form pages 2-3

For more information on product at right, specify CP 3539
... see information request blank between pages 2-3.

PYREX

Brand

GLASS PIPE

7 YEARS IN A
CHLORINATING
PROCESS AT 100°C

... still going strong at B. F. GOODRICH CHEMICAL CO.!

Every day, corrosion exacts its heavy toll in chemical processing equipment. Among the most corrosive operations is, of course, chlorination. But whether it's chlorination or some other equally severe service, your pipe line costs are reduced to a minimum with the use of PYREX brand glass pipe and fittings.

At the B. F. Goodrich Chemical Co., for instance, PYREX pipe has been on the same job since 1940. It is used in the chlorination of an organic material at temperatures up to 100°C. There is no sign of deterioration because high chemical stability and low thermal expansion are

For seven years, PYREX pipe and fittings have been used at B. F. Goodrich Chemical Co., Akron, Ohio, in the chlorination of an organic—typical of the installations which prove the practical advantages of PYREX pipe.

inherent characteristics of PYREX brand glass. This installation, like hundreds of others, proves that PYREX pipe is not only practical but the least costly.

And with costs mounting in all directions, now, certainly, is the time to take advantage of every material that will lower costs without impairing product quality. When you specify PYREX brand glass pipe and fittings, you are moving in the right direction. It is available in diameters of 1", 1½", 2", 3" and 4" I.D. Bulletin IA-3 gives complete data. Use coupon below.

CORNING GLASS WORKS
CORNING, NEW YORK

SALES OFFICES: NEW YORK • CHICAGO • SAN FRANCISCO

CORNING GLASS WORKS, DEPT. CP-12, CORNING, N. Y.

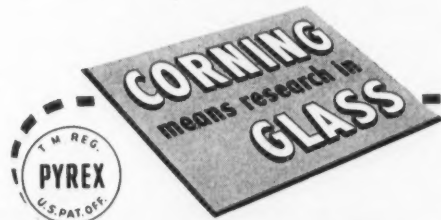
Please send me Bulletin IA-3 describing PYREX brand pipe.

NAME.....TITLE.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

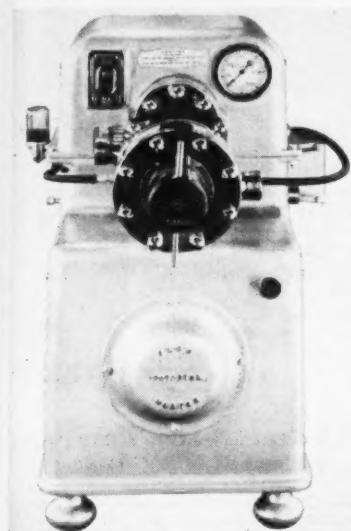


PYREX GLASS PIPE
BRAND

CHEMICAL PROCESSING Preview

Continuous Uniform Production of Grease, Blending Oils

Entire system is automatic; blending, milling, homogenizing unit is heart of process



USES — To enable grease manufacturers to eliminate all batch processing.

FEATURES — The entire system is automatic and once set-up produces a homogeneous, perfectly uniform product day after day. The process provides continuous production, uniformity of product with homogeneity.

DESCRIPTION — In the Flow-Master Process, the base ingredient is conducted from an autoclave (This is

Temperer unit of grease processing system blends, mills, homogenizes

not furnished with the various units) into subsequent equipment. Additional liquid base ingredients are proportioned into the mixture by "Flow-Master" pumps in the quantity desired. All these are thoroughly mixed by means of a "Flow-Master Roto-Feed" continuous mixer. At this point, any dry additives may be added by means of a dry proportioner, and water or other liquid additives proportioned into the mixture by another Flow-Master pump.

The heart of the new process is the Flow-Master Temperer (see illustration) which thoroughly processes all the ingredients under temperature control (Heat Thermal Unit not furnished.) The Temperer blends mills, and homogenizes all the ingredients and passes them along to the packaging units without the need of additional pumps. Characteristics of the finished product are under control at all times.

An additional autoclave may be added to the equipment. The number of pumps used may increase or decrease as the conditions of operation demand. Standard capacity of the system provides for processing 1000 gallons per hour. Special units produce up to 3500 gallons per hour.

MARCO COMPANY, INC., Dept. CP, Wilmington 50, Del.

When inquiring specify CP 3541 — see handy form pages 2-3

★

Adds 57 Organic Chemicals to Line

57 additions to manufacturer's line of organic chemicals since May, 1947, are listed in a 4-page circular, size 9-3/8 x 5-7/8". Literature is intended as a supplement to "Eastman Organic Chemicals, List No. 35."

EASTMAN KODAK COMPANY, Organic Chemical Sales Division, Dept. CP, Rochester 4, N. Y.

When inquiring specify CP 3542 — see handy form pages 2-3

DECEMBER, 1947

Follow the



line of most resistance



STANDARDIZE ON AMERCOAT

No single formula for a protective coating can be versatile enough to provide maximum surface protection under all conditions without compromising on some desirable quality. For this reason, AMERCOAT offers a variety of coatings, each designed to meet important requirements in controlling corrosion and preventing product contamination. There are AMERCOAT Coatings for a full range of uses, from general purpose coatings for maintenance to specialized coatings for surfaces immersed in strong chemicals.

By standardizing on AMERCOAT, there is a choice of six AMERCOAT Industrial Plastic Coatings. Since application methods for these various formulas remain essentially the same, maintenance men become familiar with application and performance. This eliminates the necessity of gaining experience with coatings of several different manufacturers in order to have a product for every coating need.

Write for a free booklet on these AMERCOAT Coatings, or, if desired, detailed information on your specific coating problem, and address of supplier near you.

AMERCOAT DIVISION, AMERICAN PIPE AND CONSTRUCTION CO.

Dept. 6H P.O. Box 3428 • Terminal Annex • Los Angeles 54, Calif.

When inquiring specify CP 3543 . . . see information request blank, pgs. 2-3

Are You Risking Losses from COMPRESSED AIR EXPLOSIONS

There's Complete Protection

from Over-Pressure in

BS & B

SAFETY HEADS

Don't scoff . . . compressed air systems **DO** explode. Insurance records offer proof. Protect your machinery, plant, personnel. **SAFETY HEADS** provide that extra margin of safety!

- **INSTANT ACTION**, even to super-speed pressure waves.
- **FULL PIPE SIZE** unrestricted relief opening.
- **VERSATILE** . . . 5 to 25,000 psi.

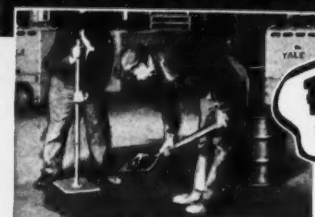
Write at once for Catalog. Address Special Products Division, Black, Sivalls & Bryson, Power and Light Bldg., Kansas City 6, Mo.



FOREIGN INQUIRIES INVITED
BLACK, SIVALLS & BRYSON, INC.
KANSAS CITY, MO. OKLAHOMA CITY, OKLA.

When inquiring specify CP 3544 — see handy form pages 2-3

Heavy Duty Plastic Makes SOLID FLOOR PATCH INSTANTLY...No Wait for Setting!



FREE TRIAL OFFER

**Tamp Smooth!
Truck Over!**

Now you can restore broken concrete to solid smoothness without having to close off the area. Use durable **INSTANT-USE** . . . a tough, plastic material which you simply shovel into hole—tamp—and run traffic over immediately. **NO WAITING.** Bonds tight to old concrete. Makes smooth, solid, heavy-duty patch. Withstands extreme loads. Keep a drum on hand for emergencies. Immediate shipment.

Mail Coupon for Details of
FREE TRIAL OFFER

INSTANT-USE

FLEXROCK COMPANY

3611 Filbert St., Philadelphia 4, Pa.
Canadian Office: 21 King St., E., Toronto, Ont.
Please send me complete **INSTANT-USE** information and details of **TRIAL ORDER PLAN**—no obligation.

Name _____
Company _____
Address _____



When inquiring specify CP 3545 — see handy form pages 2-3

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TO MEET YOUR REQUIREMENTS

HACKNEY CYLINDERS

Lower Transportation Costs
Full Protection to Product
Ease of Handling

Greater Resistance to Transit
and Handling Abuse



• In Hackney Cylinders you get a container that more than complies with the minimum requirements set up under ICC regulations.

These sturdy, durable cylinders are made from special-grade, open-hearth, flange-quality steel, rolled to exacting specifications: A seamless shell is formed by a series of cupping and cold drawing operations. The open end is then completely closed, and the neck uniformly shaped by the special Hackney hot spinning process. Excess weight is eliminated by the cold drawing. Thus, a cylinder of light weight is assured, yet one of exceptional strength. Write for full details.

Hackney Pressed Steel Tank Company

Manufacturers of Hackney Products

1463 South 66th Street, Milwaukee 14 208 S. La Salle St., Room 2085, Chicago 4
1387 Vanderbilt Concourse Building, 568 Roosevelt Building, Los Angeles 14
New York 17 235 Hanna Bldg., Cleveland 15, Ohio

When inquiring specify CP 3546 — see handy form pages 2-3

INTERNATIONAL

PORTABLE MIXERS

MEDIUM and HEAVY DUTY. Modern Design and many different types, Direct Drive, Gear Motor, Slow-Speed.

PERMANENT MIXERS

With or without Tanks—Top or Side Entrance—Stirrers of the propeller or turbine type.

DRY BLENDEES, AUTOCLAVES, KETTLES AND DIGESTERS



CATALOG
O. Mixers, Autoclaves,
Blenders, Ribbon
Mixers, etc.
No. 110. Now ready
CATALOG No. 85
B. BALL MILLS—
Letter catalog or
both sent on request

VARIOUS MIXERS
Belt or Motor Driven

INTERNATIONAL ENGINEERING, INC.

Dayton 1, Ohio.

NEW YORK, 15 Park Row * CHICAGO, 807 S. Dearborn
LOS ANGELES, 4, 150 N. MORTON AVE.

When inquiring specify CP 3547 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

"That's Interesting"

Lubricant Additives Made With Aid of Alcohol

Barium Salts of alkylphenol sulfides can now be prepared pure enough to be used in the manufacture of heavy-duty, anti-dudge lubricating oils. In the process barium sulfide is used in place of the customary barium oxide or barium hydroxide. Specifically, 2, 4-dibutyl-, or diamyl- or 4-octyl-phenal monosulfide is heated in alcohol with an amount of barium sulfide sufficient for neutralization. After evolution of hydrogen sulfide has ceased, the solvent is evaporated. (USI Chemical News)

Finish for Interior Surfaces Made from Sucrose

Research of the Eastern Regional Laboratory USDA has developed a sucrose product — allyl sucrose which promises a finish that will withstand marking by water, heat, alcohol, acids, greases. Work on this product opens a new field of research on other similar derivatives which may be useful to industry.

Copper Stops Rot Losses in Pears

An unusual application of copper saved the D'Anjou pear industry of the Pacific Northwest a few years ago. The losses from cluster rot in shipped pears were very high until it was found that minute amounts of copper applied on the tissue wrapping paper prevented the loss. The paper is now a standard product. (Ohmite News)

Award Patent for Clear, Aqueous Shellac Varnish

Clear, aqueous shellac varnish, said to be capable of yielding a permanently flexible, water-resistant film when dried in the air is covered by a recently issued patent. It contains a volatile mixture of aliphatic alcohols, water and a plasticizer, soluble in alcohol but not in water. (Invention News & Views, Natl. Patent Council, Gary, Ind.)

4000 Times as Sweet as Cane Sugar

A new chemical compound said to be 4000 times as sweet as cane sugar has been discovered by Dr. Pieter E. Verkade of Delft Technical University, The Netherlands. The new compound is a benzene derivative, to which the chemical name 1-N-propoxy-2-amino-4-nitrobenzene has been given. (Merck report).

Efforts to Produce Synthetic Coffee

Many people in Germany tried to produce synthetic coffee but no one succeeded. This is a statement of Dr. Wilhelm Roselius, chief chemist and technical director of Kaffee Handels A. G. Bremen. He said that Dr. Staudinger of Basle, Switzerland, had the finest reproduction he had ever seen but that the formula was too complex and costly. (The Spice Mill)

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